FITPRO+™
FIT TEST SOFTWARE
VERSION 3

USER'S MANUAL

P/N 6001874, REVISION L
JANUARY 2015

START SEEING THE BENEFITS OF REGISTERING TODAY!

Thank you for your TSI instrument purchase. Occasionally, TSI releases information on software updates, product enhancements and new products. By registering your instrument, TSI will be able to send this important information to you.

http://register.tsi.com

As part of the registration process, you will be asked for your comments on TSI products and services. TSI's customer feedback program gives customers like you a way to tell us how we are doing.

UNDERSTANDING, ACCELERATED

TSI Incorporated - Visit our website **www.tsi.com** for more information.

USA	**Tel:** +1 800 874 2811	**India**	**Tel:** +91 80 67877200
UK	**Tel:** +44 149 4 459200	**China**	**Tel:** +86 10 8219 7688
France	**Tel:** +33 1 41 19 21 99	**Singapore**	**Tel:** +65 6595 6388
Germany	**Tel:** +49 241 523030		

©2015 TSI Incorporated

Printed in U.S.A.

FITPRO+™
FIT TEST SOFTWARE
VERSION 3

USER'S MANUAL

P/N 6001874, REVISION L
JANUARY 2015

SHIP/MAIL TO:
TSI Incorporated
500 Cardigan Road
Shoreview, MN 55126-3996
USA

E-mail address:
answers@tsi.com
Website:
http://www.tsi.com

U.S.
Technical Support:
1-800-874-2811
1-651-490-2811
Fax:
1-651-490-3824

INTERNATIONAL
Technical Support:
(001 651) 490-2811
Fax:
(001 651) 490-3824

Copyright ©

TSI Incorporated / 2008-2015 / All rights reserved.

Address

TSI Incorporated / 500 Cardigan Road / Shoreview, MN 55126 / USA

E-mail

answers@tsi.com

Fax No.

(651) 490-3824

TSI SOFTWARE LICENSE AGREEMENT

This is a legal agreement between you, the end user, and TSI Incorporated. **BY INSTALLING THE SOFTWARE, YOU ARE AGREEING TO BE BOUND BY THE TERMS OF THIS AGREEMENT.** IF YOU DO NOT AGREE TO THE TERMS OF THIS AGREEMENT, PROMPTLY RETURN THE UNOPENED PACKAGE AND THE ACCOMPANYING ITEMS (including written materials and binders or other containers) to TSI for a full refund.

TSI SOFTWARE TERMS

1. GRANT OF LICENSE. FitPro+™ for Windows® Software has been developed by TSI Incorporated to support the TSI PortaCount® Plus Respirator Fit Testers Model 8020, and Model 8020M, PortaCount® Pro Respirator Fit Testers Model 8030 and the TSI PortaCount® Pro+ Universal Fit Tester Model 8038. It is available free of charge to all users. The user may freely copy this software and install it on multiple computers. Updates are available for free download from TSI's Web site: www.tsi.com/software.

2. COPYRIGHT. The SOFTWARE is owned by TSI and is protected by United States copyright laws and international treaty provisions. Therefore, you must treat the SOFTWARE like any other copyrighted material (e.g., a book or musical recording) except that you may either (a) make copies of the SOFTWARE for backup or archival purposes, or (b) transfer the SOFTWARE to a hard disk provided you keep the original for backup or archival purposes.

3. OTHER RESTRICTIONS. You may not reverse-engineer, decompile, or disassemble the SOFTWARE.

4. DUAL MEDIA SOFTWARE. If the SOFTWARE package contains multiple types of media, then you may use the media appropriate for your computer.

5. U.S. GOVERNMENT RESTRICTED RIGHTS. The SOFTWARE and documentation are provided with RESTRICTED RIGHTS. Use, duplication, or disclosure by the Government is subject to the restrictions set forth in the “Rights in Technical Data and Computer Software” Clause at 252.227-7013 and the “Commercial Computer Software - Restricted Rights” clause at 52.227-19.

6. LIMITED WARRANTY. TSI warrants that the SOFTWARE will perform substantially in accordance with the accompanying written materials for a period of ninety (90) days from the date of receipt.

7. CUSTOMER REMEDIES. TSI’s entire liability and your exclusive remedy shall be, at TSI’s option, either (a) return of the price paid or (b) repair or replacement of the SOFTWARE that does not meet this Limited Warranty and which is returned to TSI with proof of payment. This Limited Warranty is void if failure of the SOFTWARE has resulted from accident, abuse, or misapplication. Any replacement SOFTWARE will be warranted for the remainder of the original warranty period or thirty (30) days, whichever is longer.

8. NO OTHER WARRANTIES. TSI disclaims all other warranties, either express or implied, including, but not limited to implied warranties of merchantability and fitness for a particular purpose, with regard to the SOFTWARE and the accompanying written materials.

9. NO LIABILTY FOR CONSEQUENTIAL DAMAGES. In no event shall TSI be liable for any damages whatsoever (including, without limitation, special, incidental, consequential or indirect damages for personal injury, loss of business profits, business interruption, loss of information or any other pecuniary loss) arising out of the use of, or inability to use, this SOFTWARE.

Contents

ABOUT THIS MANUAL V

Conventions v

Trademarks v

INTRODUCTION VII

CHAPTER 1 INSTALLATION AND SETUP 1

Computer Requirements for FitPro+™ Software 1

Install FitPro+ v3 Software 1

Start FitPro+ Software for the First Time (Program Setup) 3

Global FitPro+ Options 5

User Configuration 7

CHAPTER 2 FIT TESTING WITH FITPRO+ SOFTWARE 9

Connecting the Model 8030, 8038, or 8020M 9

Start the PortaCount Fit Tester and FitPro+ Software 10

Begin Fit Testing 11

CHAPTER 3 FITPRO+ SOFTWARE MENU OPTIONS 15

File Menu 16

Report Print Settings 16

Card Print Settings 17

Exit 17

Database Menu 17

PortaCount Menu 17

Fit Test 17

Real Time 18

Daily Checks 19

Report Menu 21

Select Report 21

Single Fit Test 21

Setup Menu 21

Global FitPro+ Options 21

PortaCount Communication 22

Help Menu 23

Help File Contents 23

About FitPro+ Software 23

CHAPTER 4 DATABASE MANAGEMENT AND OPERATION 25

Database Menu 26

Editing Record Tables 27

Edit or View the People Table 27

Edit or View the Respirator Table 29

Edit or View the Fit Test Table 31

Edit or View the Protocol Table 33

Change Active (Link) 35
Manage Database Links 35
Data Record Tools 39
Flash Drive Database Exchange 40
Export a FitPro+ Database to the Flash Drive (XML Database) 41
Import a Flash Drive Database into a FitPro+ Software Database 42
Export 43
Database Copy/Merge/Move 44
Backup and Restore 45
Delete 46
Advanced Record Selection and Filtering 47
Split a Database 48

CHAPTER 5 CREATE, MODIFY, AND PRINT REPORTS 51

The Report Wizard 53
FitPro+ Software Printing 56
Single Fit Test Report 57
Removable Fit Test Card Options 57

CHAPTER 6 TROUBLESHOOTING 59

APPENDIX A PRINTING FIT TEST CARDS WITH AN ID CARD PRINTER 61

ID Card Printer Setup 61
Configuring FitPro+ Software to Print with an ID Card Printer 61

APPENDIX B USING THE PORTACOUNT EMULATOR 65

APPENDIX C USING MULTIPLE FIT TESTERS 67

Setting up Multiple PortaCount Fit Testers 67
Start FitPro+ Software and Check the Connectivity of all Devices 68
Fit Testing 69
Perform Daily Checks 70
Monitor Real-Time Fit Factors 71

APPENDIX D USING FITPRO+ SOFTWARE WITH MODELS 8020, 8020M, AND 8028 73

Setup 73
Operations 74

INDEX 75

About This Manual

This manual describes how to install, set up, and use FitPro+™ Fit Test Software (referred to as FitPro+ software).

Conventions

The following conventions are used throughout this manual:

Convention	Description
Boldface	Menu options and dialog box fields and buttons are shown in boldface type. For example: Click **Next>>** to continue.
F	Keyboard key names, such as the F key, are shown in keyboard type.
The "|" Character	The phrase "select **Database | Utilities | Convert"** means pull down the **Database** menu, select **Utilities**, then select **Convert** on the menu.
Underlined Characters	Menu items can be selected with the mouse or by pressing the A key and the shortcut key for the menu or option. The shortcut key is underlined on the screen display. For example, to select the **File** menu, press A then F. If you do not see underlined menu items on your screen, Microsoft Windows has not been configured to show them unless you press the A key first.

Trademarks

- Microsoft®, Windows®, Windows® XP, Windows® 7 (32 and 64 bit), Windows® 8 (32- and 64-bit), SQL Server®, Access®, and Excel® are registered trademarks of Microsoft Corporation.
- Adobe® and Acrobat® are registered trademarks of Adobe Systems Incorporated.
- FitPro™, FitPro+™, and N95-Companion™ are trademarks of TSI Incorporated.
- PortaCount® Pro and PortaCount® Pro+ are registered trademarks of TSI Incorporated.

TSI Web Site

Please visit the TSI web site www.tsi.com to:

- Check for FitPro+ software updates www.tsi.com/software.
- Receive further product training www.tsi.com/pcacademy.
- Download application notes.
- Download instruction manuals.
- Download product brochures.
- Register your PortaCount Pro Respirator Fit Tester.
- Obtain a return material authorization (RMA) number before sending your PortaCount Pro Fit Tester in for service.

Introduction

FitPro+™ software is intended for use with the Model 8030 PortaCount® Pro and Model 8038 PortaCount® Pro+ Respirator Fit Testers. FitPro+ Fit Test Software also supports Models 8020, 8020M (military version) and 8028 PortaCount® Plus Fit Testers.

Note

"Model 8028" refers to a combination of the model 8020 with the addition of the N95-Companion mask fit tester, Model 8095, where these two units are connected during operations.

FitPro+ software features include:

- Supports up to four PortaCount Pro/Pro+ Fit Testers running simultaneously (Models 8030 and 8038 only).
- Full automation of the fit test process.
- This version uses Microsoft® Access® as the default database application. There is also optional support for server-based Microsoft® SQL Server®.
- User Interface in four languages including English, German, French, and Spanish.
- Database management tasks such as: merging, moving, copying, deleting records, exporting databases, and more.
- Database backup and restore.
- Exchange databases with a PortaCount Pro/Pro+ Fit Tester through the use of a flash drive.
- A wide choice of report capabilities, including one that indicates who is due for a fit test. There is also a single page report for each test subject, and custom designed reports.
- Daily checks for diagnostic support.
- A real-time fit factor display for use in respirator training.
- Printing of fit test reports and fit test cards (using an optional card printer).
- Allows fit testing using emulators that mimic actual Model 8038 or 8030 test devices to allow users to train and familiarize themselves with common fit test procedures without using a real device or tying up personnel to perform as subject.

(This page intentionally left blank)

CHAPTER 1

Installation and Setup

Computer Requirements for FitPro+™ Software

- Personal computer running Windows® XP, Windows® 7 (32- and 64-bit), Windows® 8 (32- and 64-bit) operating system.
- Microsoft .NET version 4. The installation software will install Microsoft.NET if necessary.
- A 1 GHz or faster processor.
- Monitor with minimum screen resolution of 1280 x 800.
- 500 MB free space on hard drive.
- 1 USB port minimum for use with Models 8030, 8038, 8020M. Use a 4-port passive USB hub (optional) to facilitate the connection of multiple 8030 or 8038 PortaCount® Pro Fit Testers to the computer.
- 1 RS-232 COM Port to USB Adapter for use with 8020 or 8028 (optional).
  A CD-ROM reader (to install the software). Alternatively, you can download the software from www.tsi.com/software.

Install FitPro+ v3 Software

This procedure assumes you are installing the software on a personal computer running Windows® 7 operating system. There may be slight variations in the screens you see, but the process should be similar enough to allow you to install the software on Windows® 8 or Windows® XP operating systems.

Only an Administrator can install the FitPro+™ v3 software. Once the software is installed and set up successfully, any user can operate the FitPro+™ v3 Software.

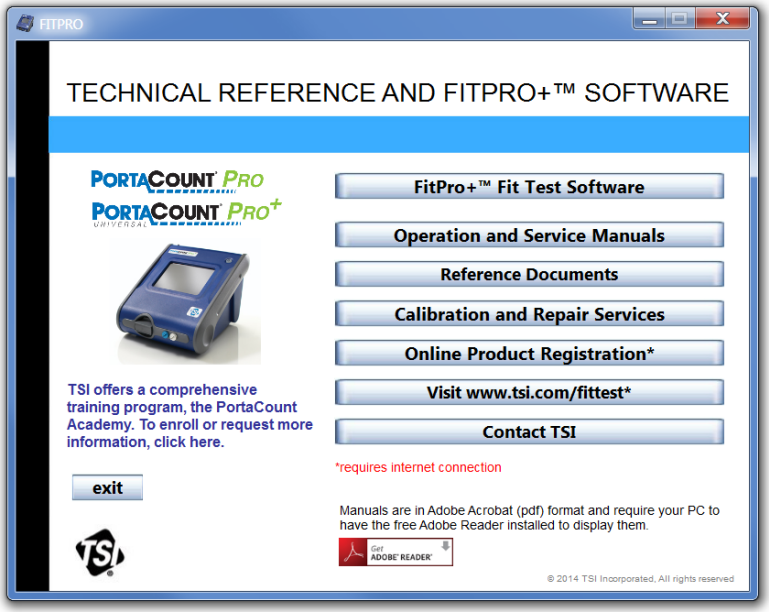
Note

Disconnect the PortaCount® PRO Respirator Fit Tester from the computer USB port before starting the FitPro+™ v3 software installation.

FitPro™ v2 and FitPro+ v3 software can coexist. Installing FitPro+™ v3 software and converting FitPro v2 databases to the FitPro+™ v3 software format does not alter your FitPro v2 software installation in any way. FitPro v2 software will run after you install FitPro+ v3 software.

To begin the installation, insert the CD-ROM "*PortaCount® Pro Technical Reference and FitPro™ Software CD v3*" into a CD-ROM drive. The CD should automatically start running after about 30 seconds. The screen shown on the right is the first screen you will see.

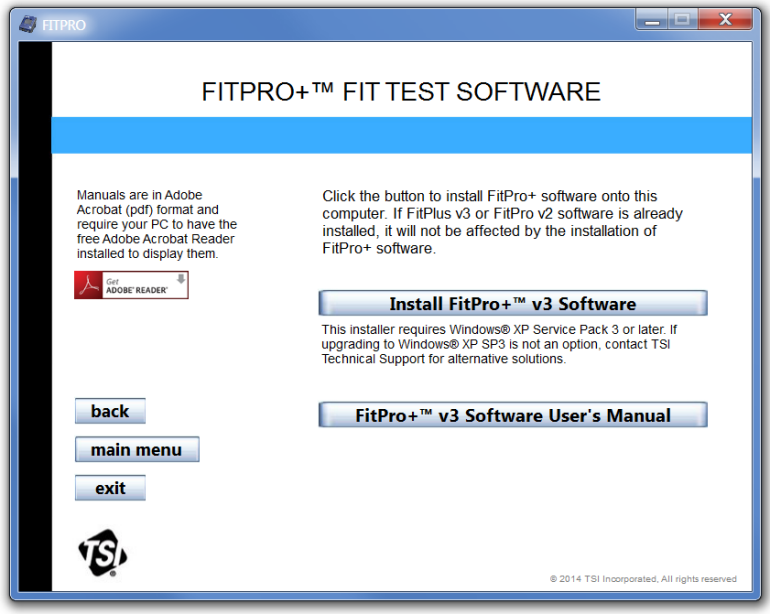
***Note**: If the CD does not start automatically, view the root folder on the CD and double-click the file "**autorun.exe**."*


FITPRO
TECHNICAL REFERENCE AND FITPRO+™ SOFTWARE
PORTACOUNT PRO
PORTACOUNT PRO+
FitPro+™ Fit Test Software
Operation and Service Manuals
Reference Documents
Calibration and Repair Services
Online Product Registration*
Visit www.tsi.com/fittest*
Contact TSI
TSI offers a comprehensive training program, the PortaCount Academy. To enroll or request more information, click here.
*requires internet connection
exit
Manuals are in Adobe Acrobat (pdf) format and require your PC to have the free Adobe Reader installed to display them.
© 2014 TSI Incorporated. All rights reserved

When the main installation dialog box appears, click **FitPro+ Fit Test Software**. The screen to the right will be displayed.

Click **Install FitPro+ v.3 Software**.

Proceed by following the onscreen prompts that will walk you through the installation process.


FITPRO
FITPRO+™ FIT TEST SOFTWARE
Manuals are in Adobe Acrobat (pdf) format and require your PC to have the free Adobe Acrobat Reader installed to display them.
Click the button to install FitPro+ software onto this computer. If FitPlus v3 or FitPro v2 software is already installed, it will not be affected by the installation of FitPro+ software.
Install FitPro+™ v3 Software
This installer requires Windows® XP Service Pack 3 or later. If upgrading to Windows® XP SP3 is not an option, contact TSI Technical Support for alternative solutions.
back
main menu
exit
FitPro+™ v3 Software User's Manual
© 2014 TSI Incorporated. All rights reserved

If Microsoft .NET is not already installed on your computer you will be prompted to install that first. After .NET is installed, a reboot of the computer may be required. If so, restart the FitPro+ v3 software installation from the beginning.

The Installation Wizard will then prompt you to install the necessary Device Drivers and finally the FitPro+ v3 software.

USB Driver Installation

After the successful completion of FitPro+™ v3 software installation and program setup, you can power-on the PortaCount® instrument. Once the power-on operation is complete (approximately 1 minute), connect the USB cable from the instrument to a free USB port on your computer.

Windows® 7 & 8 operating system users—The Device Drivers are installed during the software installation process referenced above.

Windows® XP operating system users—The computer will display a "New hardware found" box at the bottom right of your screen. During the software installation process the PortaCount Fit Tester drivers were loaded onto your computer. It may be necessary to use the Found New Hardware wizard to install the drivers on Windows® XP operating system.

If there are any issues with the Device Driver installation refer to the RESFT 201: PortaCount Pro-to-PC Communications instructional course located at the PortaCount Academy Online Training Center website: www.tsi.com/pcacademy.

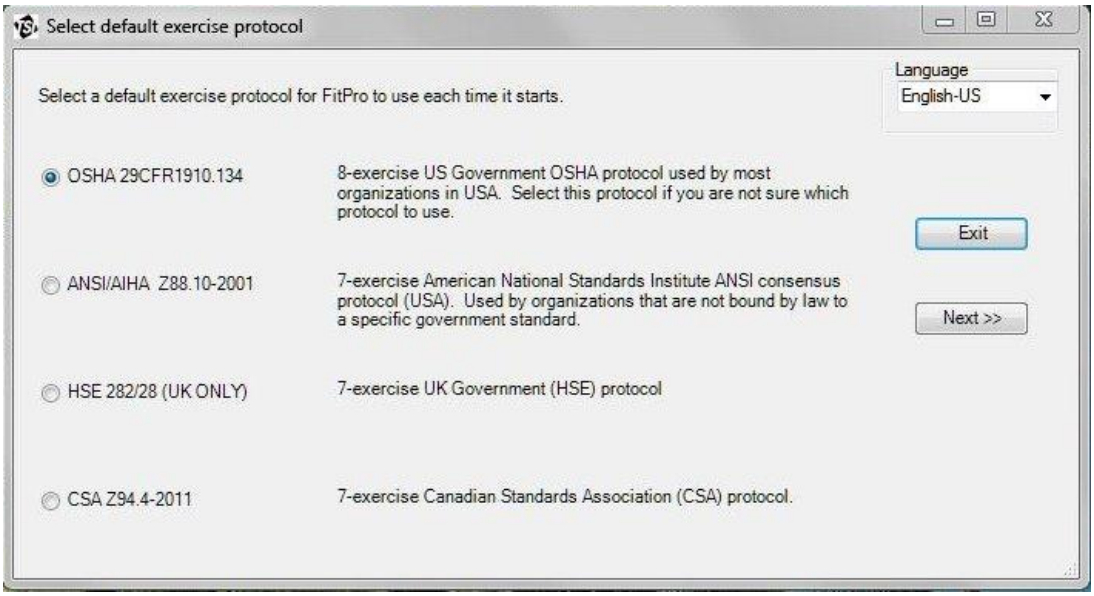
Note

It is recommended that you use the same USB port on your computer each time you use the PortaCount Pro Respirator Fit Tester, as this will help to minimize any potential communication issues.

Once FitPro+ software has been installed, start the software to complete the program setup as described in the following section.

Start FitPro+ Software for the First Time (Program Setup)

1. Find the **FitPro+** icon on your Windows® desktop and click on it. (You can also start FitPro+ software by selecting **Programs** from the **Start** menu. Look under **FitPro+** and select **FitPro+** to start the program.)
2. Select the desired language from the options available in the "Language" list.
3. When FitPro+ software starts for the first time, you are required to select a default exercise protocol from the following dialog box. These are the most commonly used protocols for fit testing.


Select default exercise protocol
Select a default exercise protocol for FitPro to use each time it starts.
Language
English-US
OSHA 29CFR1910.134
8-exercise US Government OSHA protocol used by most organizations in USA. Select this protocol if you are not sure which protocol to use.
Exit
ANSI/AIHA Z88.10-2001
7-exercise American National Standards Institute ANSI consensus protocol (USA). Used by organizations that are not bound by law to a specific government standard.
Next >>
HSE 282/28 (UK ONLY)
7-exercise UK Government (HSE) protocol
CSA Z94.4-2011
7-exercise Canadian Standards Association (CSA) protocol.

4. Review the options and select the desired default protocol. Then click **Next**. You can change the default fit test protocol at any time or add new ones (see Edit or View the Protocol Table)**.**

5. If a "PortaCount Not Detected" warning box appears. Click **OK** to continue. During setup, you do not need to be connected to a PortaCount fit tester. Connect the PortaCount Pro Respirator Fit Tester in Chapter 2 describes how to connect the PortaCount Pro Respirator Fit Tester to your computer and perform fit tests. (For training purposes, you may run the software using an Emulator. To use the Emulator, refer to Appendix B).

6. When the program starts for the first time, it automatically creates and selects a Microsoft Access® database named **Default**. TSI recommends that novice users use this database. This database is empty, with the exception of several standard Protocols.

   Users who are familiar with previous versions of this program can select a different database (see Change Active (Link)) and link to it. However, previous versions of FitPlus software may have to be converted for use with FitPro+ software. Chapter 4 contains detailed information concerning the menu items in the **Database** menu.

7. Set the Global FitPro+ Options. There are defaults for this dialog, so you do not have to make any changes immediately, but you should review the dialog box and understand the settings. See **Global FitPro+ Options**, below.

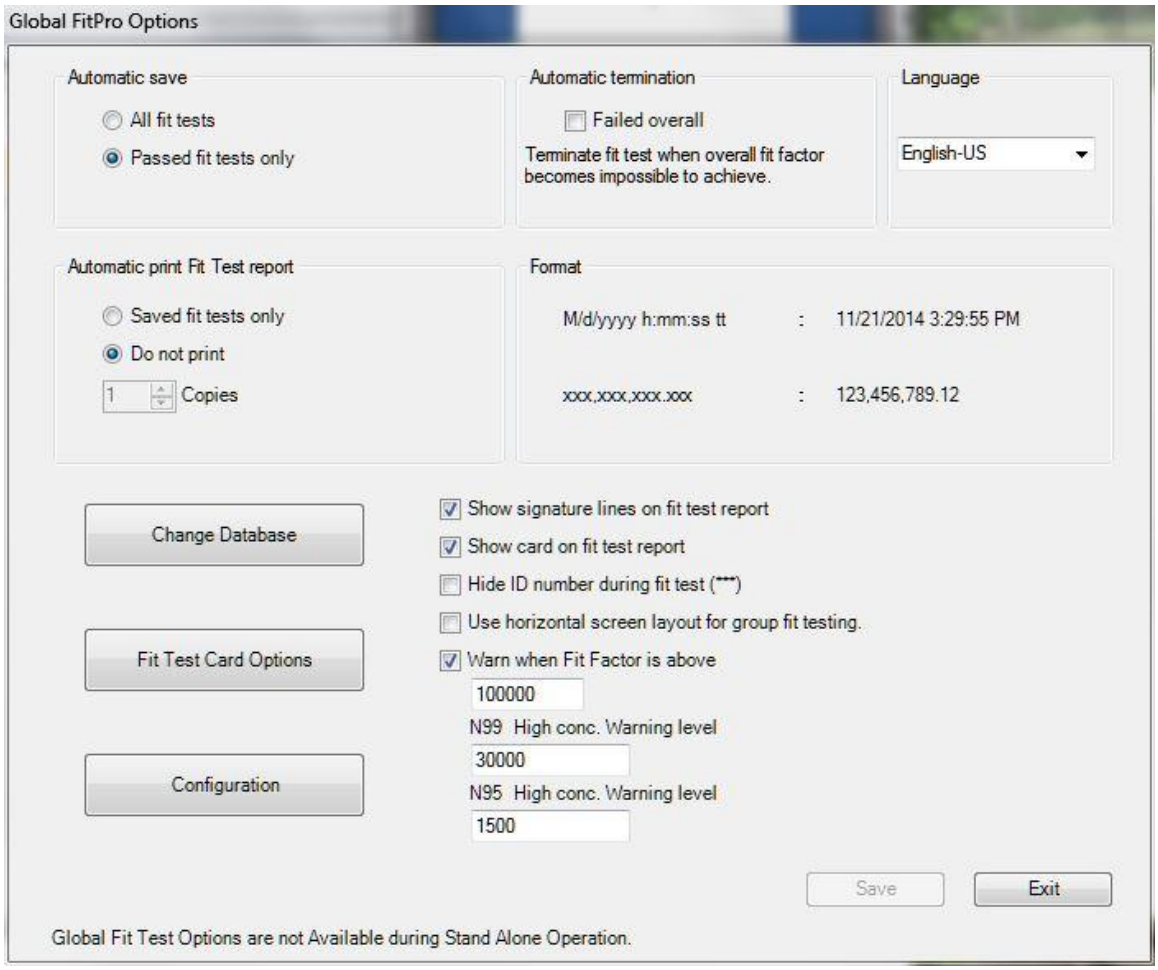
8. Set User Configuration labels (optional). User Configuration fields labels are optional fields stored in the People Table that can include additional (organization specific) information about each person. You do not have to make changes to the User Configuration, but if you wish to use this feature see User Configuration below.

Global FitPro+ Options

Global FitPro+ Options affect how FitPro+ software operates, note that these changes do not affect PortaCount Stand-Alone operations. Before you do any fit testing, make sure all the options are set the way you want them. Settings remain in effect until you change them.

To view or change Global FitPro+ Options, select **Setup** | **Global FitPro+ Options** or click .

The Global FitPro+ Options dialog opens.



The fields and buttons on the dialog are described below.

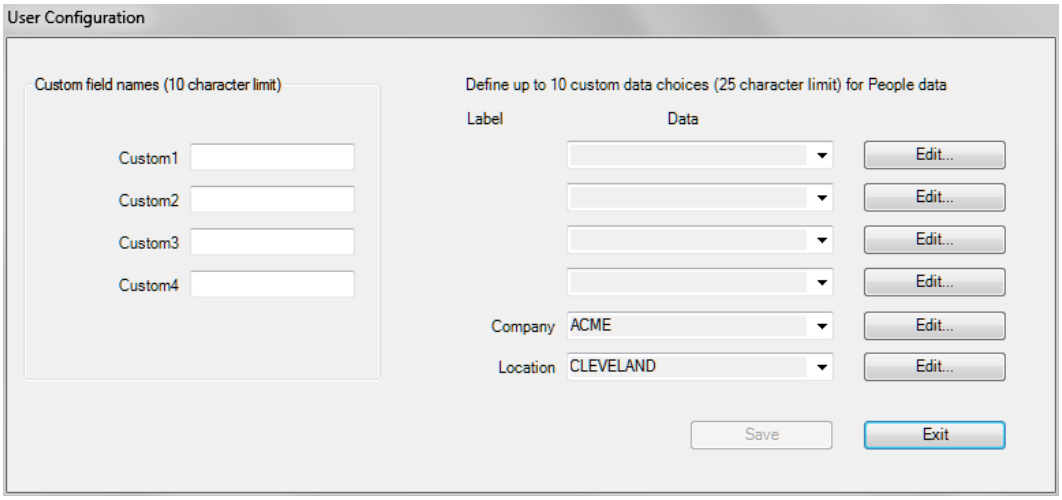
Field or Button	Description
Automatic Save	• **All Fit Tests** Saves all fit test results whether the test is incomplete, stopped, passed, or failed. • **Passed Fit Tests Only** The default choice. Saves only fit test records for those that pass.

Field or Button	Description
Automatic Print Fit Test Report	Automatically prints a fit test report at the end of each fit test. The report is sent to the assigned Report Printer. You can select the number of copies to be printed. • **Saved Fit Tests Only** Prints a report for every saved fit test. • **Do Not Print** This is the default choice. Use this if no printer is available during fit testing. The report can be printed at a later time. ***Note:*** *The printer must be set up before automatic reports are generated at the end of fit tests.*
Automatic Termination (Failed Overall)	If selected, the software automatically terminates the fit test when the Overall Fit Factor becomes impossible to achieve. The default is off. ***Note:*** *Specifies what to do if an exercise fit factor is so low that passing the entire fit test becomes mathematically impossible.*
Change Database	Click this button to change the active database. You cannot add a link to a new database with this option nor can you create a new database. Use **Database | Manage Database Links** for those operations (see Chapter 4, Manage Database Links for details).
Configuration	Click this button to display the **User Configuration** dialog. See User Configuration (below) for information.
Fit Test Card Options	Click this button to set the options for printing fit test cards using an ID card printer. See Appendix A for information.
Format	Displays the formats used for dates and numbers. It is determined according to the language you have selected.
Hide ID number during fit test	Hides the ID number of the fit test subject while the fit test is progressing. The ID number is visible when entering information about a new person. Later it is replaced by asterisks(*).
Language	Select the language (and formatting) you want to use when you run the software. When you select a language, all software information is instantly displayed in that language. The available options are Español, Francais, Deutsch, English-US, English-UK, and English-24 Hour. English-US is the default language.
Show card on Fit Test report	When checked, the Fit Test card is printed at the bottom of the Fit Test report. When unchecked, the bottom of the Fit Test report is blank.
Show Signature Lines on Fit Test Report	Select to provide the single-page fit test report with an area at the bottom for the test subject and test operator to sign. This option is enabled by default.
Use horizontal screen layout for group Fit Testing.	When checked, the Fit Test Dashboard is displayed in a horizontal layout when multiple PortaCount Fit Testers are connected. When unchecked the screen layout is in a vertical mode which provides better viewing for multiple PortaCount Fit Testers (default). ***Note****: The Fit Test Dashboard is automatically displayed horizontally when only a single PortaCount Fit Tester is connected.*

Field or Button	Description
Warn When Fit Factor is Above…	This option is enabled (checked) by default. If it is enabled, a warning message appears when the fit factor for any exercise exceeds the value you enter. The fit test continues despite the warning message. The purpose of the warning is to alert an inexperienced fit test operator that something *may* be wrong, such as a blocked sample tube. If this option is enabled, the value should be set at a fit factor level that will almost never occur unless something *is* wrong. A blocked mask sample tube will often result in fit factors well over 500,000. The default value is 100,000; however, you may have to select a higher value more appropriate for the types of respirators you use and other considerations.
N99 and N95 High Concentration Warning level	The high concentration warning notifies you when the ambient air particle concentration exceeds the target range during Daily Checks and Fit Tests. Prolonged exposure to excessive concentration levels could degrade the performance of the PortaCount Fit Tester over time, resulting in failed daily checks or a “Low Particle Message.” By default, the high concentration warning displays when the ambient concentration is above 30,000 particles/cm^3 when testing masks with 99% efficiencies or greater, or above 1,500 pt/cm^3 when testing masks with <99% efficiencies (N95). These default values can be varied from the Global Settings screen to accommodate environments where particle concentration is necessarily elevated. To troubleshoot this warning, refer to “Service and Maintenance” in the *PortaCount Pro/Pro+ Respirator Fit Tester Operation and Service Manual*.

User Configuration

The User Configuration dialog lets you configure optional fields in the People Table that store specific information about each person; fields such as department, job title, medical status, shift, and so on are most helpful. The User Configuration settings are stored in the selected database. Each database can have a unique User Configuration and the User Configuration can be copied from one database to another.

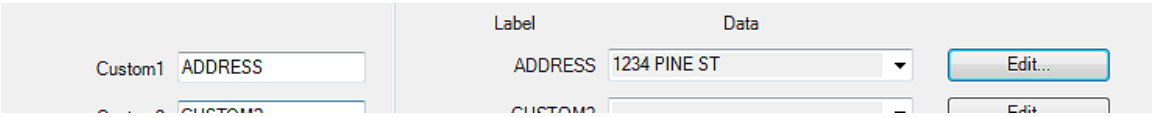


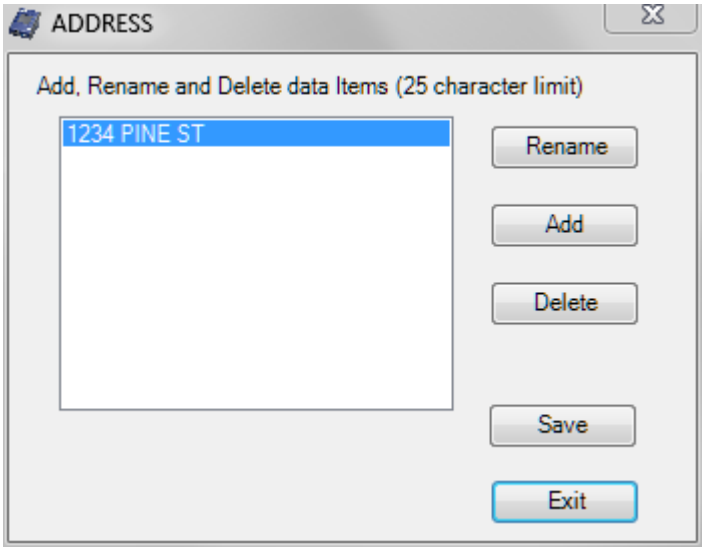
The User Configuration dialog has four custom fields (Custom1…Custom4) and two additional fields (Company and Location). You can specify up to 10 Data values for each of the six fields.

The Custom field names can be modified but the Company and Location field names cannot be modified. Select custom fields that do not duplicate the predefined fields in the People Table. The predefined fields are: Last Name, First Name, ID Number, Company, and Location.

To add a Custom field, first type the Custom field name in one of the spaces provided. The field name you type will replace the label.

To add (delete or change) a data value for any of the fields, click **Edit** next to the Data drop-down box. A dialog box appears that shows the current data values. Click **Add**, type the data value you want to use, and click **Save**. Similarly, you can delete or rename a data value by selecting it from the window and pressing **Delete** or **Rename**.





You can change the custom field names and data values at any time. However changing them on this dialog box only affects future fit tests. All previously recorded fit test results retain the custom field names and data values that were in effect at the time the record was created.

The FitPro+ software program is now set up and ready for Fit Testing.

CHAPTER 2

Fit Testing with FitPro+ Software

This chapter describes how to connect the PortaCount® Pro Respirator Fit Tester to your computer and perform a fit test with FitPro+ software.

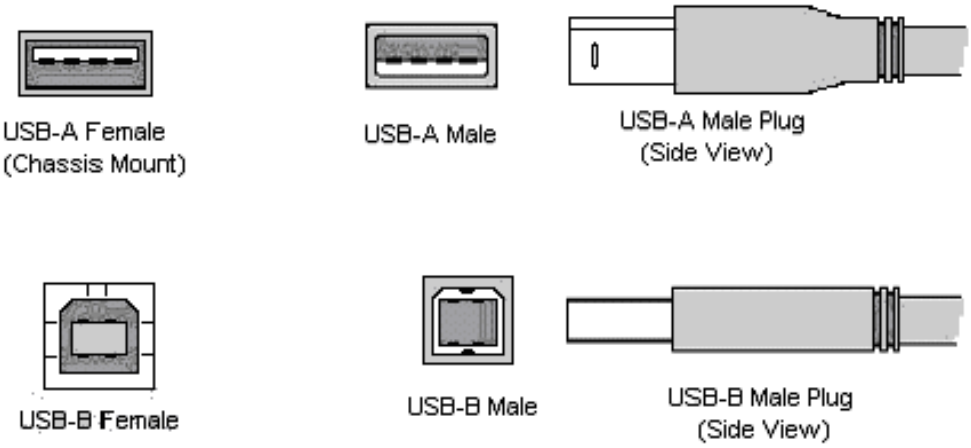
Note

FitPro+ software must be installed according to the procedure in Chapter 1 before you can perform fit testing as outlined in this chapter.

Connecting the Model 8030, 8038, or 8020M

The Model 8030, 8038 or 8020M Respirator Fit Tester connects to a USB port on your computer. It is recommended that you use the same USB port on your computer each time you use the PortaCount Pro, as this will help to minimize any potential communication issues. If you are using more than one Model 8030 or 8038 PortaCount Pro Respirator Fit Tester to conduct simultaneous fit tests, refer to Appendix C, Using Multiple Fit Testers for additional information.

1. Plug the “A” type end of the USB cable shipped with the PortaCount Pro Fit Tester into a USB port on your computer.
2. Plug the “B” type end of the USB cable into the USB Port located on the back of the PortaCount Pro Fit Tester.



Note

If this is the first time the PortaCount ® Fit Tester has been attached to your computer, you may be informed that Windows has detected new hardware and you are asked to install drivers. Refer to Chapter 6 Troubleshooting.

3. Make sure the PortaCount ® Respirator Fit Tester is set up and operational. See the *PortaCount Pro Operation and Service Manual* for instructions if you are not already familiar with setting up the instrument.

Start the PortaCount Fit Tester and FitPro+ Software

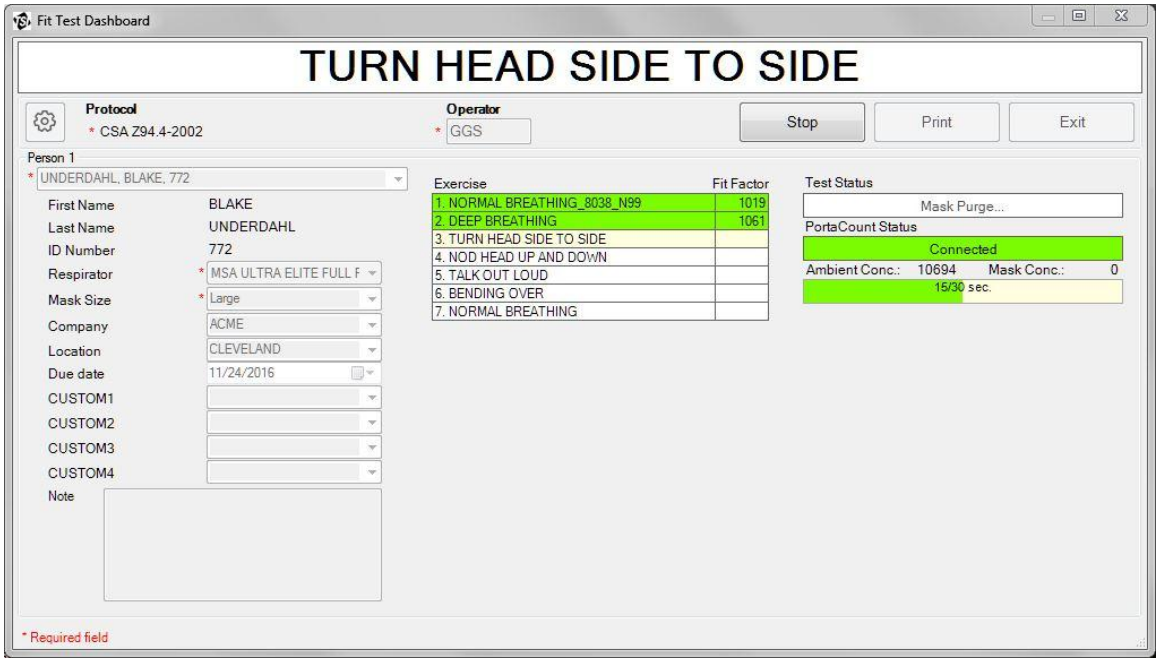
1. Press the **On/Off** button to turn the PortaCount Pro Fit Tester on.
2. Wait for the instrument to display the main Activities menu (approximately 60 seconds).
3. Start the FitPro+ software.
4. You may get a message "PortaCount not detected" if this is the first time you have connected the instrument to the software. If you get this message, press **OK** and then select **Setup | PortaCount Communication** to select the module type for the appropriate PortaCount model. For more information on how to setup and verify communications refer to PortaCount Communication in Chapter 3.
5. You will then be asked if you want to perform **Daily Checks**. TSI strongly recommends performing daily checks every day ***before*** you begin fit testing and anytime you suspect an instrument malfunction. If the instrument passes the daily check, it indicates the PortaCount Pro Fit Tester is in good working order. Refer to Daily Checks in Chapter 3.

Note
Once the FitPro+ software initiates control, you will be “locked out” from performing any operations from the display of the instrument. To switch back to Stand-alone Mode you must exit the FitPro+ software or unlock the PortaCount fit tester from the display.

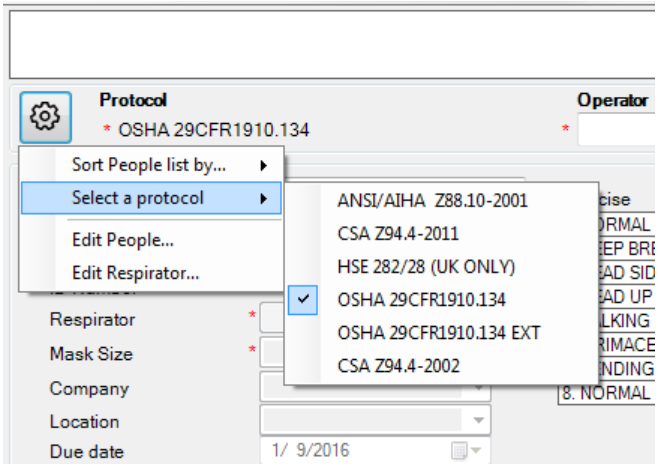
6. Select **Setup | PortaCount Communication** to select the module type for the appropriate PortaCount model. For more information on how to setup and verify communications refer to the section Chapter 3, PortaCount Communication.

Begin Fit Testing

Once FitPro+ is running, start a fit test by selecting **PortaCount | Fit Test** from the menu or click the icon. The Fit Test Dashboard opens. The Fit Test Dashboard can accommodate up to four simultaneous fit tests when using certain PortaCount models. See Appendix C, Using Multiple Fit Testers.



1. Make certain the exercise protocol shown beneath 'Protocol' is the one you want to use. If it is not the one you want to use, click and then click **Select a protocol** to bring up the following display.



2. Select the protocol you want to use from the list, confirm your choice, and the display will close and the protocol you selected will be the new exercise protocol.

   As you can see the icon also lets you access other operations such as: change how people are sorted in the "Person" list, and it lets you edit people records and respirator records. For more information about these operations refer to Chapter 4 which describes how to manage databases.

3. Enter the operator's initials or name in the **Operator** field. This is a required field**.** There is a **25-character maximum**, but 3 to 5 characters is recommended due to layout considerations for printed fit test reports or cards.

4. Select the test subject. Use the drop-down box, or alternatively begin typing the name of the subject. The default search value is Last Name, but you can also select a subject by:

   a. Clicking and selecting a different search value: First Name, ID number, Company, or Location and then using the drop-down box or begin typing.

   b. You can add a new person to the People Table before you start fit testing by selecting <**ADD NEW PERSON…**> from the Person drop down. This opens the Edit People Table window where you can enter in the information for the person's record; click **SAVE** then **EXIT** when finished.

   c. You can make changes to a person's record in the People database by clicking and selecting "Edit People." Display the person's record, make the necessary changes. and click **SAVE** then **EXIT**.

5. When the correct subject is displayed, information is automatically filled in. (First Name, Last Name, ID Number, etc.).

6. Select an available Respirator for the subject using the drop-down box. The list of available respirators is limited by the model of the connected PortaCount Fit tester. A new Respirator can be added by selecting, **<ADD NEW RESPIRATOR…>** from the Respirator drop down list.

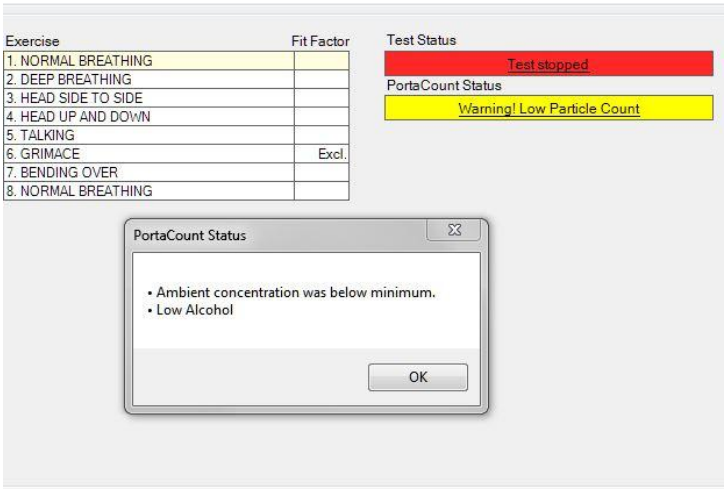
7. Select a Mask Size for the subject using the drop-down box. The drop-down box will include sizes entered previously for other fit tests. A new size can also be entered.

8. The remaining fields are optional. Select options from these boxes as desired.

9. Before you click **START** to begin the fit test make certain the PortaCount Pro Fit Tester sample tube (clear tube) is connected to the respirator, and ask the test subject if he or she is ready to begin the exercise protocol. Refer to the *PortaCount Pro Respirator Fit Tester Operation and Service Manual* if you need additional information.

Note
The Fit Test Subject is required to wear the mask for five minutes prior to beginning the Fit Test exercises.

10. Click **START**. Fit testing begins immediately and the first exercise description appears. The elapsed exercise time appears as a graphic progress bar. As each exercise completes, the result appears and PortaCount fit tester beeps to indicate that it is time to begin the next exercise. The exercises proceed one after another without pause. The ambient and sample values for the current exercise are displayed. Exercises that pass are highlighted in green. Exercises that fail are highlighted in red. The dialog box displays “Fit Test Completed” when the fit test is complete. The Test Status box displays either “Pass” or “Fail” and the Fit Test fit factor. Pass or fail is determined by comparing the overall fit factor to the Fit Factor Pass Level.



The PortaCount Status indicator displays information about the PortaCount Fit Tester. If the text in either indicator is underlined, you can click on it to get additional information. Additional troubleshooting information can be found in Chapter 6 Troubleshooting as well as *PortaCount Pro Respirator Fit Tester Operation and Service Manual.*

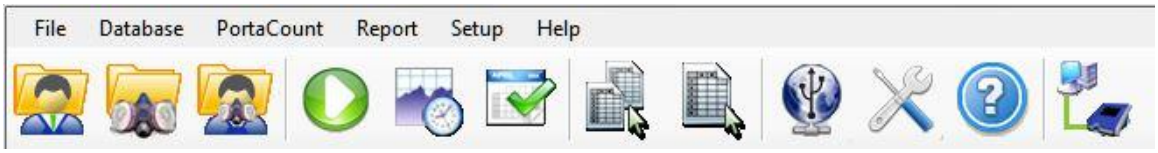
11. To begin a test on another person or group of people, click **New Test**.
12. To begin a new test on the same person or group of people click **Redo Test.**
13. To exit Fit Testing, click **Exit.**
14. To print a detailed Fit Test report for the fit test just completed, click **Print**.

(This page intentionally left blank)

CHAPTER 3

FitPro+ Software Menu Options

This chapter describes the menu options of the FitPro+™ software. The icons for the menu options that can be accessed from the toolbar are shown next to the appropriate menu option.



The following table lists the menu options. You can select any of the options using the mouse or the keyboard.

Menu	Options
File	• Report Print Settings • Card Print Settings • Exit

Database	• Edit
	  ○ People Table
	  ○ Respirator Table
	  ○ Fit Test Table
	  ○ Protocol Table
	• Change Active
	• Manage Database Links
	  ○ Create New Link
	  ○ Remove Link
	• Data Record Tools

PortaCount	• Fit Test • Real Time • Daily Checks • Daily Check Settings
Report	• Select Report • Single Fit Test
Setup	• Global Fit Test Options • PortaCount Communications
Help	• Help File Contents (this manual) • About FitPro+

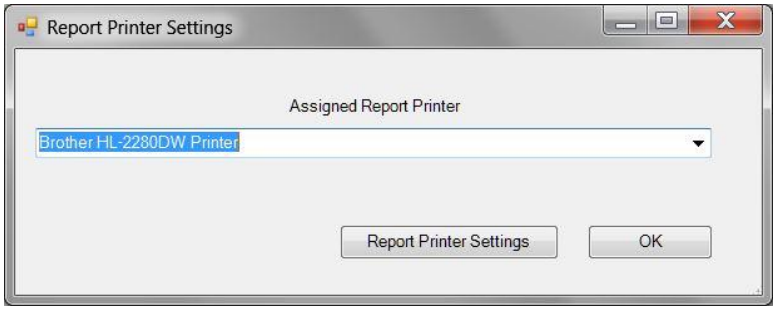
File Menu

The **File** menu lets you configure certain print functions or exit the program.

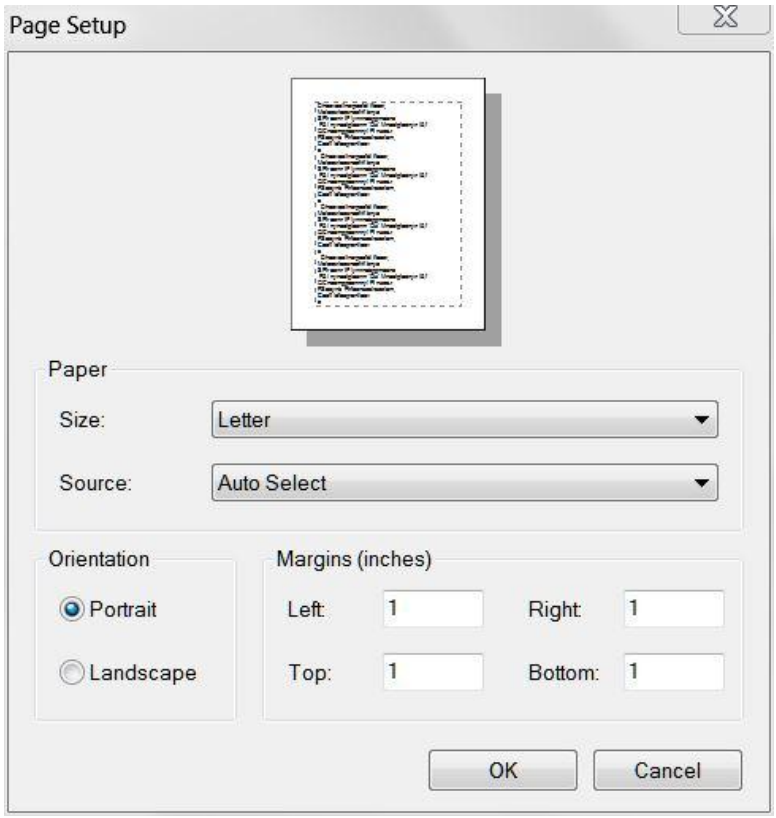
Report Print Settings

Select this option to set up the report printer and page properties.

The first dialog lets you select a report printer. Use the drop-down arrow to select another printer.



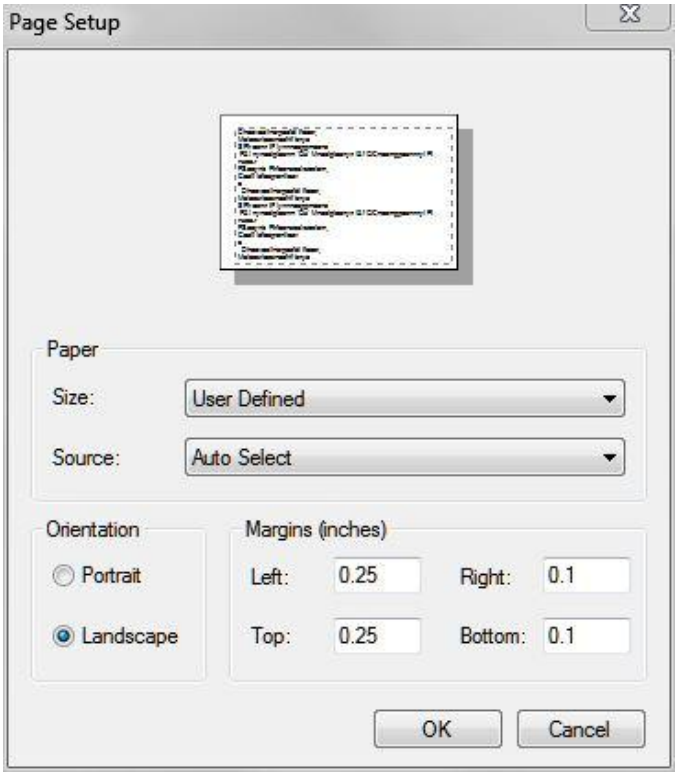
Click the **Report Printer Settings** button to display the second dialog to set up the printer paper size, source, orientation, and margin sizes.



See Chapter 5 for details on creating and printing reports.

Card Print Settings

Select this option to set up the ID card printer and ID card properties. The first dialog lets you select the card printer. The second dialog lets you set card size, orientation, and margin sizes. See Appendix A for details on ID card printer settings.



Exit

Select this menu option to exit the FitPro+ program; you will be asked to confirm that you wish to exit.

Database Menu

Refer to Chapter 4, Database Menu for descriptions of the Database menu options.

PortaCount Menu

The PortaCount Menu lets you start fit testing, display real-time fit factors and real-time ambient concentrations, and set up and perform daily checks.

Fit Test

Select this menu option to begin fit testing. Refer to Chapter 2 for a description of the procedure for running fit tests using FitPro+ software.

Real Time

Select this menu option to display real-time fit factors or real-time ambient concentration. The real-time fit factor display can assist in respirator training and troubleshooting. It is useful for helping a test subject experiment with strap tension and other adjustments while watching the effect their efforts have in real time. The test subject learns how each adjustment affects the fit, and learns how to achieve a fit that is comfortable and has minimum leakage. The real-time ambient concentration display assists the tester in adjusting the ambient concentration to desired levels. The Real-time Fit Factor Display can display the fit factors or ambient concentrations for up to four fit testers (see Appendix C - Using Multiple Fit Testers).

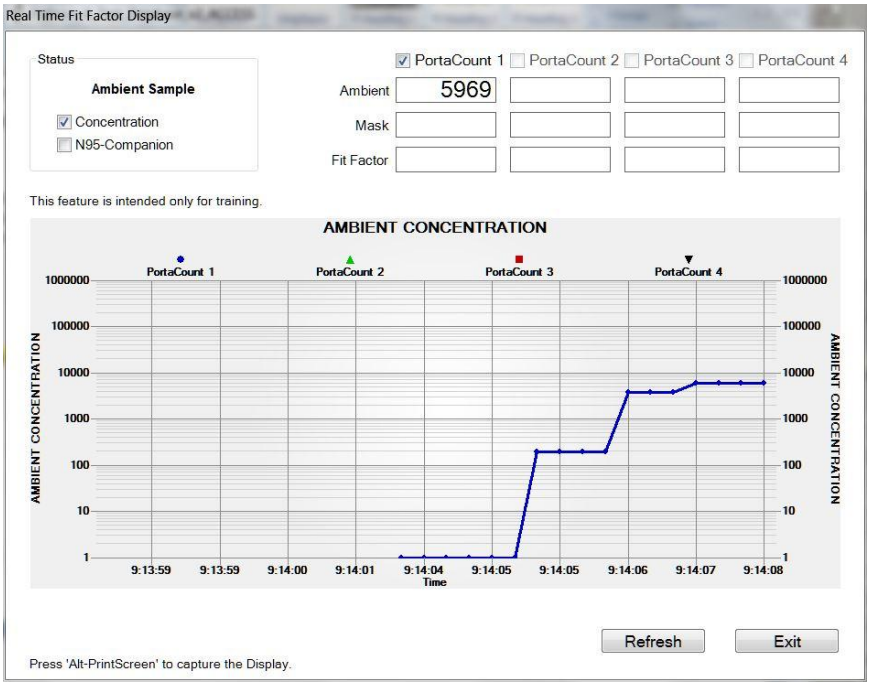
The real-time fit factor feature is intended for training. It should not be used immediately before a fit test. Using the feature to help the test subject don the respirator immediately before the official fit test defeats one of the main purposes of fit testing: *to prove that the test subject knows how to don the mask properly without help*. Use the Real-time Fit Factor feature for training and practice only.

Note

You can use the real-time fit factor display just prior to a fit test as long as you have the test subject remove the mask and put it on again (without the use of the real-time display or other assistance) before the final test.

Before starting the real-time fit factor display, the PortaCount Pro Fit Tester must be on and properly connected to the computer. You must also have someone wearing a respirator that is properly connected to the PortaCount Pro Fit Testers.

- To start the Real-Time Display, select **PortaCount | Real Time** or click . The Real-Time Fit Factor Display appears.



FitPro+ software begins by instructing the PortaCount Pro Respirator Fit Tester to take an ambient concentration reading and store the value. Then the PortaCount Pro Fit Tester begins continuous monitoring of the mask concentration.

You can observe the Fit Factor reading fluctuate in near real time on the line graph. (There is a 5- to 10-second delay between when a change in fit occurs and when the graph displays the change in fit factor.)

The graph pauses every 5 minutes while the PortaCount Pro Fit Tester takes a fresh ambient air measurement. Click **Refresh** to force a new ambient reading sooner.

- Click the **Concentration** box to view real-time ambient concentration. In this mode, the PortaCount Pro Fit Tester continuously measures the particle concentration through the ambient inlet port allowing the user to easily check ambient concentration in preparation for testing.
- Click the **N95-Companion** box if you are using a Model 8038 and testing the fit of a respirator that is less than 99% efficient, including N95, P2, and P1 disposables.

Daily Checks

Select this menu option to perform daily checks of the PortaCount Pro Respirator Fit Tester (up to four instruments can be checked at once, see Appendix C - Using Multiple Fit Testers).

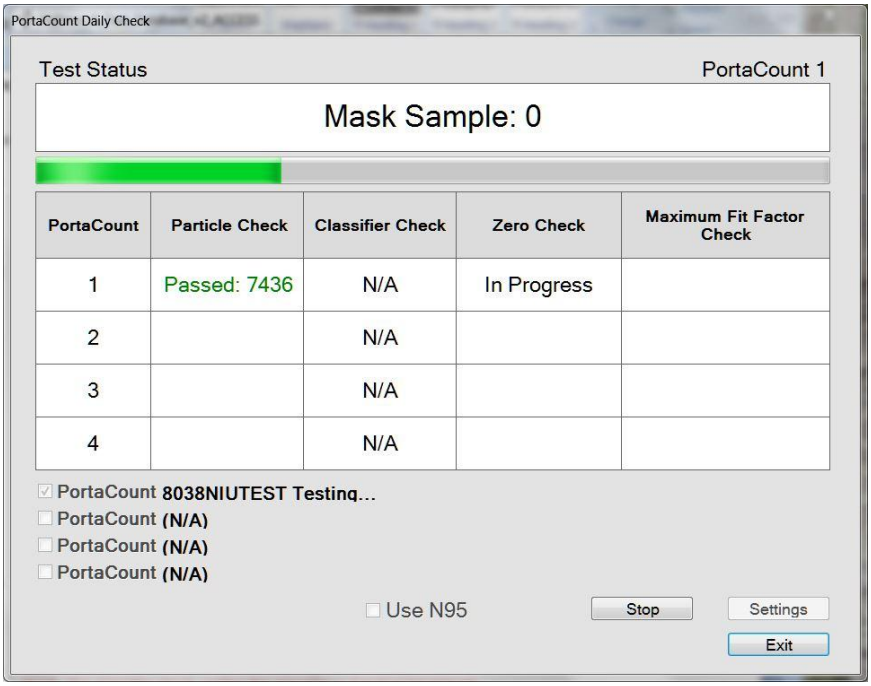
Daily checks consist of a particle check, classifier check (this is a test performed only for the PortaCount Pro+ 8038 when the N95 feature is enabled), zero check, and maximum fit factor check. TSI strongly recommends performing daily checks every day ***before*** you begin fit testing and anytime you suspect an instrument malfunction. If the instrument passes the daily checks, it indicates the PortaCount Pro Fit Tester is in good working order.

Daily check results are automatically stored in the active database (in the Daily Check Table). You can see a history of daily check results using the Daily Checks Report, see Chapter 5.

Note
The PortaCount Pro Respirator Fit Tester must be on and the warm-up period complete for the daily checks to proceed.

To start Daily Checks:

1. Select **PortaCount** | **Daily Checks** or . The PortaCount Daily Checks dialog box appears.



2. If you are using a PortaCount Fit Tester that supports N95 testing and plan to fit test filtering facepiece respirators that are less than 99% efficiency, you must select the “Use N95” box. If you plan to fit test respirators with >99% efficiencies AND <99% efficiencies, you should run two Daily Checks, one with the "Use N95" box checked and the other with the box unchecked.

   The pass/fail settings used by FitPro+ software for the daily checks can be viewed by clicking Settings on the PortaCount Daily Checks dialog box or by selecting **PortaCount | Daily Check Settings.** Do **NOT** change these settings.

Caution
Changing the Daily Checks default settings is ***not*** recommended. Factory settings are optimal.

3. The Daily Checks dialog box lists each of the instruments attached to the computer along with its serial number and the last time a daily check was performed. If you are checking more than one instrument, Select the check box next to the instrument serial number to perform a daily check. The test status box instructs you to remove the HEPA filter or mask from the PortaCount Pro Fit Tester sample hose and click **Start**. Once you click **Start**, the daily checks begin. The status and progress of each test appears in the dialog box. The particle check is performed first.
4. If you select “Use N95” box, the particle check is immediately followed by the classifier check. The classifier check verifies the classifier is functioning properly.

5. After the particle check (and classifier check) is complete, you are instructed to attach the HEPA filter to the clear sample hose and click **Start** again. This initiates the zero check which automatically proceeds to the maximum fit factor check.
6. When all checks are complete, the test results appear in the dialog box and are stored in the Daily Check Table of the active database.
7. Click **Stop** if you want to stop the checks for any reason before they are complete; click **Exit** to close the dialog box.

Note
Refer to the "PortaCount Pro Respirator Fit Tester Operation and Service Manual" for technical information regarding the daily checks.

Report Menu

The Report Menu lets you select reports and fit test records to view or print.

Select Report

Select this menu option to view, modify, or print the predefined or user-defined reports. Refer to Chapter 5 for information regarding printing and viewing reports.

Single Fit Test

Select this menu option to view or print an *individual* fit test record. When you select this option the "Edit Fit Test Table" dialog appears. Refer to Chapter 4 for a definition of the fields and buttons of this dialog box. See Single Fit Test Report in Chapter 5 for an example of the report.

Setup Menu

Select this menu option to change the Global FitPro+ Options and select/verify PortaCount Communications.

Global FitPro+ Options

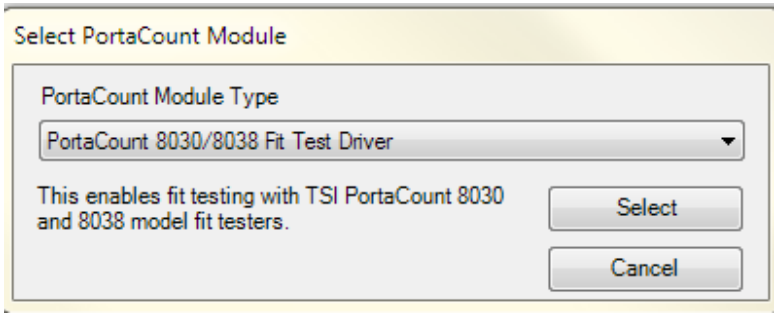
Select this option to change how FitPro+ software operates. Refer to Chapter 1 for information about setting Global FitPro+ Options.

PortaCount Communication

Select **Setup | PortaCount Communication** to select the appropriate driver module for the PortaCount Fit Tester. Options are:

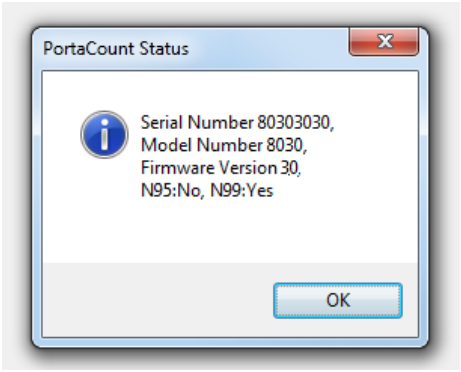
- PortaCount 8030/8038 Fit Test Driver
- PortaCount Emulator Fit Test Driver
- PortaCount 8020M Fit Test Driver
- PortaCount 8020/8028 Fit Test Driver

See Appendix B for further Emulator information. See Appendix D for more 8020/8028 or 8020M information.


Select PortaCount Module
PortaCount Module Type
PortaCount 8030/8038 Fit Test Driver
This enables fit testing with TSI PortaCount 8030 and 8038 model fit testers.
Select
Cancel

Choose the desired driver and click **Select**. Depending on the driver module selected, you may be presented with on screen prompts related to communication or other settings. Follow the on screen prompts to configure the fit test driver.

Once a connection has been established with the PortaCount(s), a status screen will display information about the connected instrument(s).



If using more than one PortaCount Fit Tester, refer to Appendix C - Using Multiple Fit Testers.

Note
To troubleshoot connectivity problems, refer to Chapter 6, Troubleshooting for details.

Click the **Connectivity** shortcut button to reconnect a device that has been disconnected. Use the mouse to hover over this button to see the serial number of your device.

Once the FitPro+ software initiates control, you will be “locked out” from performing any operations in Stand-alone mode. To switch back to Stand-alone Mode, you must exit the FitPro+ software. In the event a PortaCount Pro Fit Tester gets disconnected from the controlling computer before it has been unlocked by the software, it can also be unlocked from the touch screen or by turning the PortaCount off and then back on. Refer to the *PortaCount Pro Respirator Fit Tester Operation and Service Manual*.

Help Menu

The Help Menu provides online access to this manual (in PDF format) and other information, including the software version number of your FitPro+ software.

Help File Contents

Select **Help | Help File Contents** to open a .pdf file of this manual.

About FitPro+ Software

Select **Help | About FitPro** to display version information about the FitPro+ software as well as license agreement information and contact information at TSI. Click **Modules** to see all the modules used in this software version. The modules list is for diagnostic purposes only.

(This page intentionally left blank)

CHAPTER 4

Database Management and Operation

FitPro+™ software database management functions use the following types of data records:

- People
- Respirator
- Fit Test
- Protocol

The database stores information required before Fit Testing can begin, for example:

- The protocol that will be used for testing.
- Information about the respirator(s) under test.
- Information about the person under test.

The database also stores information entered when the fit test is initiated, for example;

- Respirator size.
- Next fit test due date (calculated automatically, but editable by the operator).
- The test operator's identity, such as their name or initials.

And finally, the database stores information about the result of the Fit Tests, including all of the information collected above and the pass/fail results of the test.

- You can create reports from the information saved in the database.
- You can create multiple databases if there is a need to isolate information from departments, locations, companies, etc.

Database Menu

The **Database** menu options let you perform a variety of database management functions:

- Transfer a database between a Flash Drive and the FitPro+ software.
- Edit data records to correct typographical errors.
- Change the active database currently in use.
- Create or delete a database
- Copy a database to a specific location and filename.
- Export a database table to a comma-separated value (*.CSV) text file, or a custom text file.
- Back up a database.
- Restore a database from a previous backup.
- Split the Fit Test and/or Daily Table based on the test dates.
- Import FitPlus v3 and FitPro v2 databases into FitPro+ database formats.
- Merge one database with another using selected criteria.
- Move and copy individual records from one database to another.

All Microsoft® Access® database files have an **.**mdb extension. The default database supplied with FitPro+ software is named “Default.” You can create new database files using the **New Link** dialog (see Change Active (Link)). You can link to an Access® database or an MS SQL database.

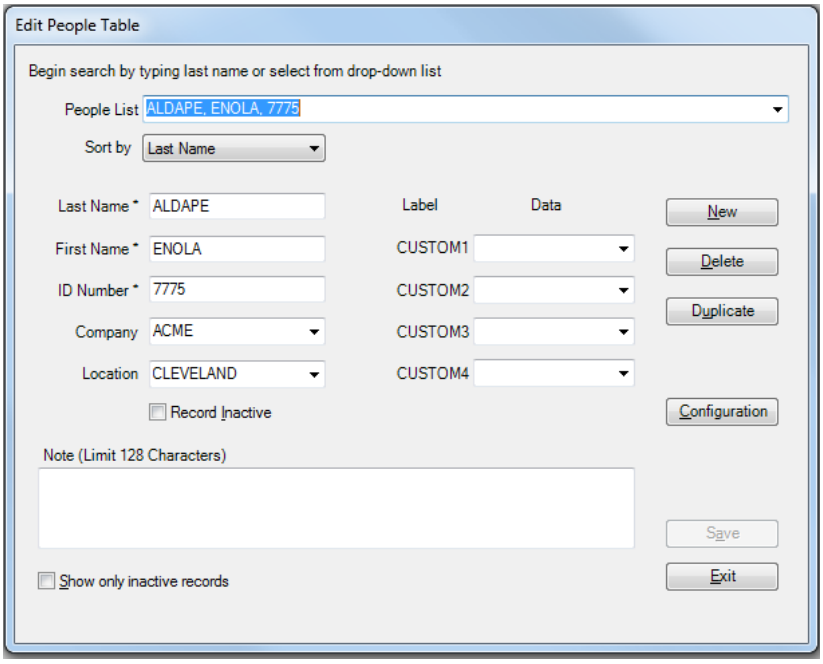
The menu options of the Database menu are described below.

Editing Record Tables

To edit (or view) any of the database records (excluding the Daily Checks records), select **Database** | **Edit** and then **People**, **Respirator**, **Fit Test**, or **Protocol**. Each editor is described below.

Edit or View the People Table

Select **Database** | **Edit** | **People** or to edit or view the People Table. The Edit People Table dialog box appears. The dialog box contains all blank fields until you select a name or click **New**.



Records in the People Table can be sorted by any of the available attributes (Last name, First Name, ID Number, Company, or Location).

To add a name, click **New** and enter the information in the appropriate fields. You must enter First and Last Name and ID Number. The other fields are optional. Click **Save** to save the record.

You can change any of the displayed information of an existing record by overwriting these fields. Click **Save** to update the record. If no changes have been made to the dialog, **Save** is not active.

To close this dialog, click **Exit**.

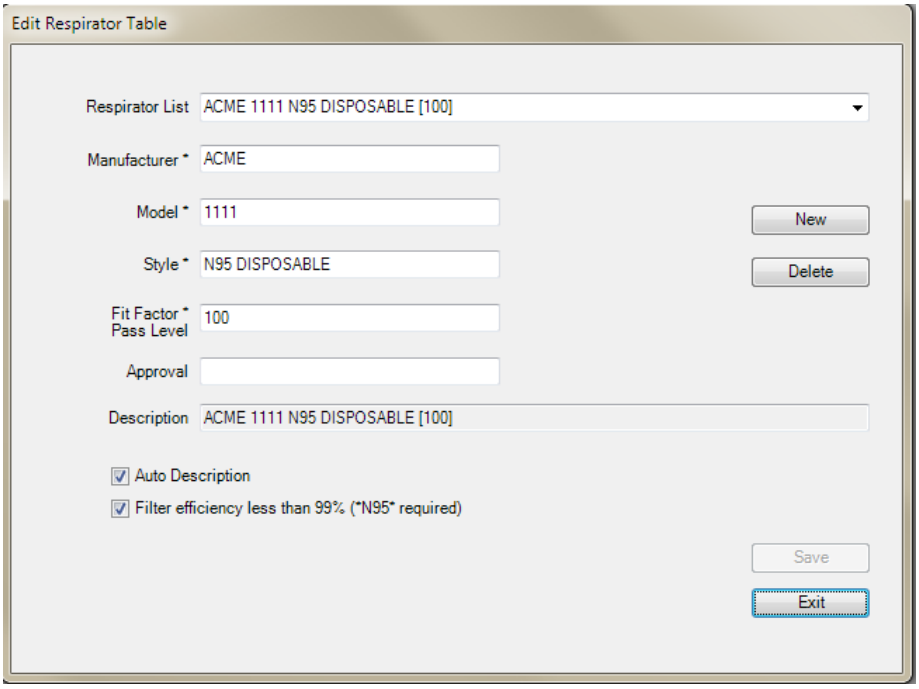
Note
If you enter an incompatible character in these fields, a warning message is displayed and the character is removed.

The following table describes the buttons and fields of the Edit People Table dialog box.

Button or Field	Description
Company	The name of the company the person works for. Select the name using the down arrow or enter a value.
Configuration	Click this button to change or view the optional fields in the People Table. See User Configuration in Chapter 1.
Delete	Deletes the current record. A warning message first appears asking you to verify you want to delete the record. If you click **Yes**, the record is immediately and permanently deleted.
Duplicate	Creates a record with the same values in each field except Last Name, First Name and ID Number. Edit those fields as necessary and click **Save**.
Exit	Closes the dialog box. If changes were made to the current data, you are given a chance to discard or accept the changes.
First Name	The person's first name. 25 character limit. Required field. Comma (,) not allowed.
ID Number	The person's ID number. 11 character limit. Required field. Comma (,) not allowed.
Label/Data	These are customizable fields. Use the field drop-down box to select preconfigured Data values. The Data values and Labels can be configured from the **Configuration** dialog (see User Configuration in Chapter 1.)
Last Name	The person's last name. 25 character limit. Required field. Comma (,) not allowed.
Location	The person's location, such as "office," "lab1," etc. Select the location using the down arrow or enter a value.
New	Opens a blank record, so you can create a new record in the database.
Note	Information about the person that can affect the fit test circumstances or results, such as "wears safety goggles," or "wears dentures." 128 character limit.
People List	Click the arrow to the right of the People List field to display a list of all the records in the database file. The name string is composed of the last name, first name and ID number, separated by commas. Each name string must be unique. Alternatively, begin typing the name in the field and it will be displayed.
Record Inactive	Check this box to indicate a person's record should be inactive. This allows you to keep the record in the database without deleting it in case the person becomes active at a later time. ***Note**: This selection may not be available for some databases*.
Save	Adds (or updates) the currently displayed information to the database.
Show only inactive records	Check this box if you want to display only those people whose records are flagged as inactive. By default, only *active* records are displayed. ***Note**: This selection may not be available for some databases*.

Edit or View the Respirator Table

1. Select **Database** | **Edit** | **Respirator** or click to edit or view the Respirator Table. The Edit Respirator Table dialog appears and displays the record for the last respirator you used.



2. Records in the Respirator Table are listed in alphabetical order. Use the drop-down list of the **Respirator List** field to display and select any respirator record. Alternatively, begin typing the respirator name in the field and it will be displayed.
3. You can change the displayed information for any existing record by overwriting the appropriate fields. To add a respirator to the table, click **New** and enter information for a new respirator in the required fields of the dialog box. Click **Delete** to delete the currently displayed record. You will be asked to verify the deletion.
4. Click **Save** if you add or update a record. If no changes are made to the dialog, **Save** is not active.
5. To close the dialog box, click **Exit**.

The following table describes the buttons and fields in the Edit Respirator Table dialog box.

Button or Field	Description
Approval	Displays the respirator approval (certification) number.
Auto Description	If checked, the description field is automatically filled in using the information from the manufacturer, model, style and fit factor pass level fields. You may overwrite the automatic description if necessary. This box is checked by default.
Delete	Deletes the displayed record. A warning message first appears, asking you to verify you want to delete the record. If you click **Yes**, the record is permanently deleted.

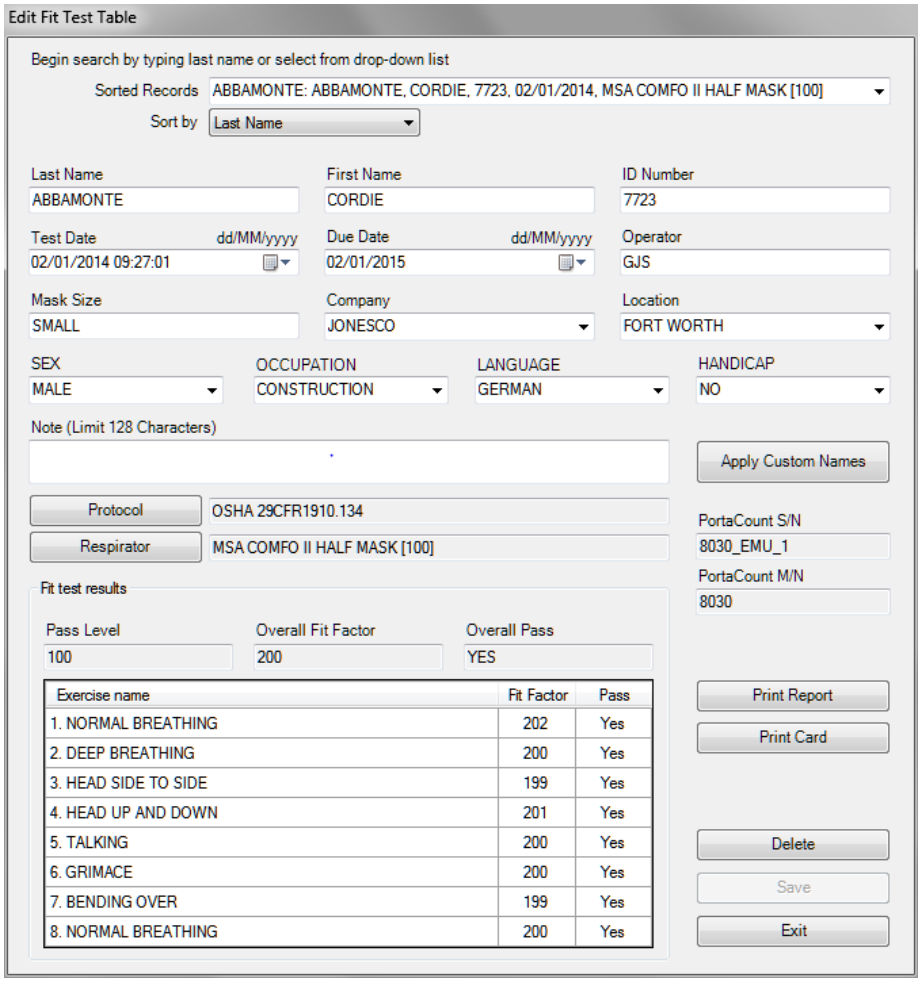
Button or Field	Description
Description	Respirator description (also shown in the Respirator List field). See Auto Description, above. 60 character limit.
Exit	Closes the dialog box.
Filter Efficiency Less than 99% (*N95* required)	Check this box if you are fit testing respirators that have a filter efficiency below 99%. You must use the PortaCount Pro Fit Tester with an N95-Companion (Model 8038). Examples of filter types with efficiency below 99% include: N95, R95, P95, P2, P1, Dust-mist, Dust-mist-fume, etc. Leave this box unchecked if the respirator is equipped with particulate filters having 99% or greater efficiency. Examples of filters with high efficiency include P100, R100, N100, P99, R99, N99, P3, HEPA etc. This box is unchecked by default.
Fit Factor Pass Level	Fit factor pass level number for this respirator, such as 100 for half masks and 500 for full-face masks. Consult the applicable regulations you intend to comply with for the correct value to use. Required field.
Manufacturer	The respirator manufacturer's name. 25 character limit. Required field.
Model	Respirator model. 25 character limit. Required field.
New	Opens a new record so you can enter a new record in the database.
Respirator List	Click the arrow to the right of the **Respirator List** field to display a list of all the respirator records in the database. You can select a new record or leave the current record in the dialog box.
Save	Updates the new or revised data in the database.
Style	Description of the respirator style, such as "half-face" or "full-face." 25 character limit. Required field.

Edit or View the Fit Test Table

Select **Database** | **Edit** | **Fit Test** or click to edit or view the Edit Fit Test Table. The Edit Fit Test Table dialog appears. Select a new record by clicking the arrow next to the **Sorted Records** field. Alternatively, begin typing in the Sorted Records field until the desired record is displayed.

Records can be sorted alphabetically using the “Sort by” drop-down menu; the sort can be by Last Name, First Name, ID Number, Company, Location, Test Date, or Due Date.

The fields that are grayed out cannot be changed, nor can the results table. The other fields can be changed. Changing a Person’s Last name, First name, or ID number from this screen will also change them in all other data records associated with that Person (People records and Fit Test records) in order to maintain the relationship between those records in the database. Changing any other values in a Fit Test record will only affect that specific record.



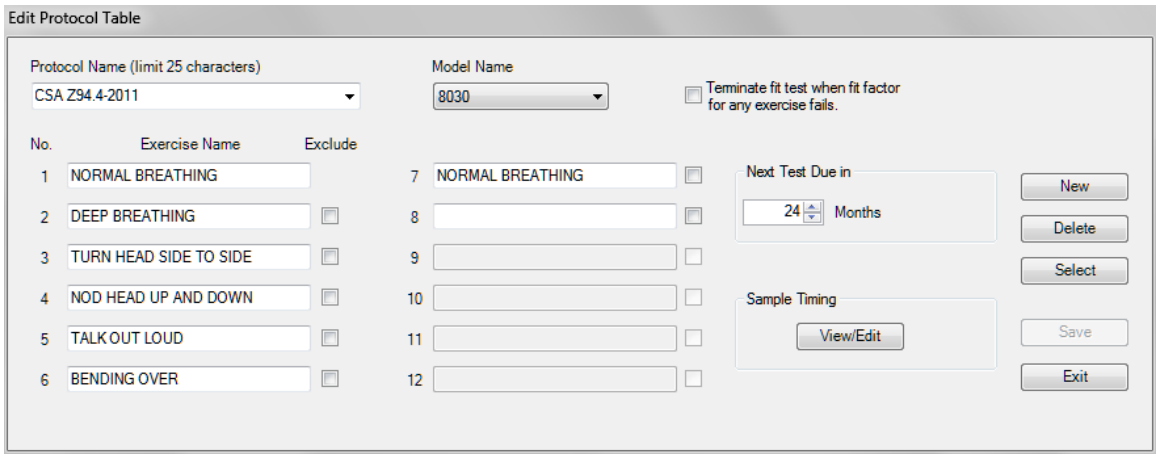
The following table describes the buttons and fields in the Edit Fit Test Table dialog.

Button or Field	Description
Apply Custom Names	Display the current custom field labels on this fit test record. Refer to Global FitPro+ Options in Chapter 1 for details on how to change these labels.
Company	Company name of the fit test subject.
Delete	Deletes the currently selected Fit Test record from the database. You will be asked to confirm the deletion.
Due Date	Date the next fit test is due relative to the Test Date of the selected record.
Exit	Closes the dialog box. If any entries were modified, you are asked whether to save or discard changes.
First Name	First name of the fit test subject.
ID Number	ID number of the fit test subject.
Last Name	Last name of the fit test subject.
Location	Location of the fit test subject.
Mask Size	Size of the mask used for the fit test.
Note	Information about the person that can affect the fit test circumstances or results.
Operator	Name/initials of the operator who conducted the fit test.
Overall Fit Factor	Overall fit factor result for the fit test.
Overall Pass	YES for a passed fit test; NO for a failed fit test.
Pass Level	Pass level used for the fit test.
PortaCount M/N	Model number of the PortaCount Pro Fit Tester used for the fit test.
PortaCount S/N	Serial number of the PortaCount Pro Fit Tester used for the fit test.
Print Card	Prints a fit test card with the current record information. A special card printer must be installed for this feature to work effectively. To adjust page margins for Fit Test Cards go to Card Print Settings in Chapter 3. .
Print Report	Prints the Fit Test report to your designated printer. To adjust the page margins for Fit Test Reports go to Report Print Settings in Chapter 3.
Protocol	Displays the fit test protocol used for this fit test. Click **Protocol** to view detailed exercise timing information. Protocol information is historical and cannot be modified.
Respirator	Displays the respirator used for this fit test. Click **Respirator** to view detailed information on the respirator used for this fit test. Respirator information is historical and cannot be modified.
Save	Saves any changes made to the current record. This button is active only if a change has been made to the currently displayed data.
Sort by	Select the attribute you want the records sorted by.
Sorted Records	Click the arrow to the right of the Sorted Records field to display all the Fit Test records in the database. Select a new record or leave the current record information in the dialog box.
Test Date	Date of the fit test.
User-Defined (custom) fields	Optional fields: User-defined fields (custom fields) that were stored in the people table for this person at the time of the fit test.

Button or Field	Description
Results Table	Displays the detailed exercise results for this fit test (Exercise Name, Fit Factor, and Pass (or fail)). Information is historical and cannot be modified. Fit Factor will display “Excl.” if the exercise was excluded from the fit test.

Edit or View the Protocol Table

Select **Database** | **Edit** | **Protocol Table** or click to edit or view the Protocol Table. The Edit Protocol Table dialog appears and displays the default protocol.



Note

Each protocol is identified by a Protocol Name and a Model Name. For example OSHA has several entries in the database corresponding to the different sample/purge time values for Model Names 8030, 8038_N99, 8038_N95, 8020 and 8028.

To change the **default** exercise protocol:

1 Select the correct **Model Name** from the drop-down box.

Note

Only the models supported by the currently selected PortaCount Fit Tester Driver Module will be shown in the drop-down list.

2 Select the protocol you want as your default protocol from the **Protocol Name** drop-down box or begin typing the protocol name in the field and it will be displayed. (Records in the Protocol Table are listed in alphabetical order.)

3 Click **Select** and confirm that you want this protocol to be the default protocol. The chosen exercise protocol will remain the default protocol until you change it.

Note

FitPro+ software automatically installs protocols into each database when the database is created, so the fit test protocol you need is probably already available. If you need to add a new protocol, first verify the Model Name corresponds to the PortaCount Fit Tester and filter efficiency that you want to test. Next click **New** and enter information for a new protocol in the fields of the dialog box. You can also change information for any existing protocol by editing these fields.

Each protocol must have a unique name. The protocol name field cannot have a comma(,). If you enter a comma in this field, a message is displayed and the comma is removed.

4 Click **Save** to update or save the protocol record. If no changes have been made to the dialog, **Save** is not active.

5 To close the dialog, click **Exit**.

The following table describes each button or field in the Edit Protocol Table dialog box.

Button or Field Name	Description
Delete	Deletes the displayed record. A warning message first appears, asking you to verify the delete action. If you click **Yes**, the record is deleted permanently.
Exercise Name	Lists all the exercises in the protocol (up to 12 exercises). 25 character limit. Required field. An empty field will cause errors, unless the field is at the end of the list of exercise names.
Exclude	Check the box next to the Exercise Name if you want to exclude it when calculating the fit factor. This exercise then is essentially a "time-out." It is typically used for the OSHA 29CFR1910.134 grimace exercise. Do ***not*** exclude exercises unless you are absolutely certain they are not required for the overall fit factor result. ***Note:*** *When an exercise is excluded, the value stored as the mask sample time becomes the time used for the entire exercise. No actual measurement is made.*
Exit	Closes the dialog box. If a new record was added or field was changed, you are prompted to save or discard changes.
Model Name	Select the model of the PortaCount Pro Fit Tester being used such as: 8020M, 8030, 8038_N99 or 8038_N95.
New	Opens a blank record so you can enter a new protocol record in the database.
Next Test Due In _ months	Number of months before the next fit test is due. This defaults to 12 months, although you can change it since some regulations call for 6 or 24 months. Consult the applicable regulations for additional information. Valid range is from 1 to 99. Required field.

Button or Field Name	Description
Protocol Name	The exercise protocol you are currently using. Click the arrow to the right of the **Protocol Name** field to display a list of all the protocol records in the database. Select a new record or leave the current record information in the dialog box.
Sample Timing	Select **View/Edit** to display the Sample Timing for PortaCount (alone) dialog box. This box sets the Mask Sample Times, Mask Purge Time, Ambient Sample Time, and Ambient Purge Time. ***Do not*** *change these values.*
Save	Saves the current information. If a new record was created, the record is added to the database. If an existing record was modified, the information is changed in the database.
Select	Click this button to make the current protocol the default protocol. ***Note****: When setting the default protocol, verify the protocol Model Name is consistent with the PortaCount Fit Tester you intend to use.*
Terminate fit test when fit factor for any exercise fails	If the protocol requires *all* exercises to pass, check this box. Most regulations allow an exercise to fail as long as the overall fit factor passes. Default is unchecked. ***Note****: There is a separate option which terminates a fit test early if the overall fit factor becomes unachievable. Refer to the Global FitPro+ Options dialog box in Chapter 1.*

Change Active (Link)

Select **Database** | **Change Active** to change or view the active database link you are using for fit tests. You can also create a new database link or a new database

When you select **Database** | **Change Active,** a list of the available database links is displayed. To change the active database link simply select the new database link from the displayed list.

At the end of the list of available links is an option to add a new link. Use **<New Link...>** to link a database not listed or create a new database. You can link to an Access database or an MS SQL database. See Manage Database Links below.

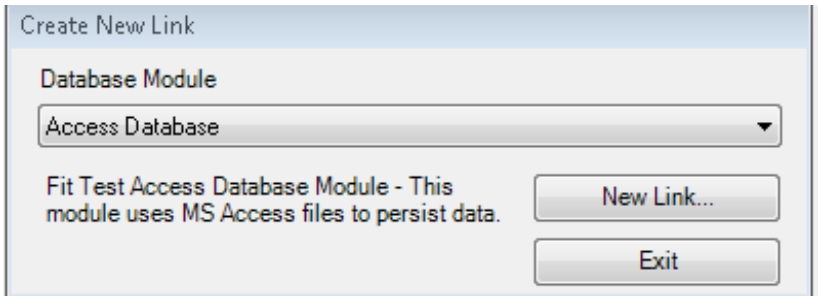
Manage Database Links

Databases are accessed by creating “links” to database files or server instances. These links add convenience because once they are established, the details of the link (backing file, server address, etc.) are remembered and selecting a database is quick and easy.

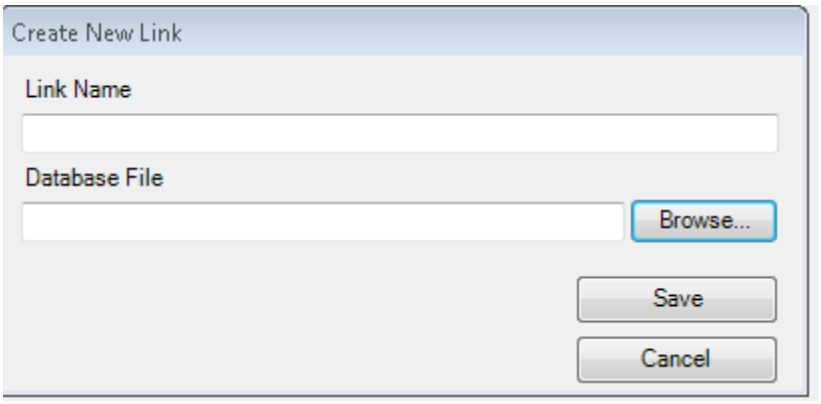
Select **Database** | **Manage Database Links** to create (add) a new link to an existing database, create a new database and link to it, remove an existing link, or delete both the link and the database file which backs it.

To link to an existing Access database or create a new Access database:

1. Select **Database** | **Manage Database Links | Create New Link.** The Create New Link dialog box appears.

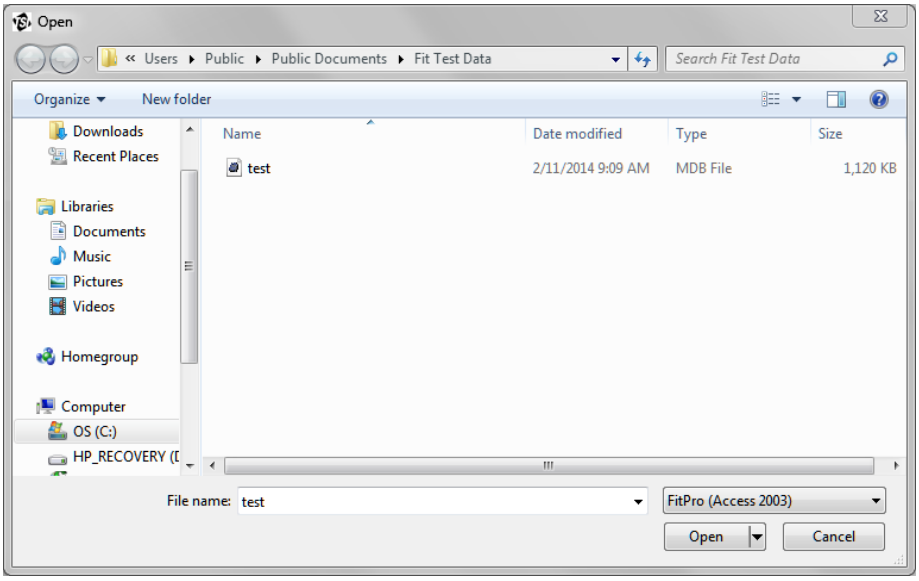

Create New Link
Database Module
Access Database
Fit Test Access Database Module - This module uses MS Access files to persist data.
New Link...
Exit

2. Select **Access Database** from the drop-down list (this is the default database type). Options are Access Database and MS SQL Database.
3. Click **New Link**. The Create New Link dialog appears.



4. Enter a link name. This can be any name you choose. It will become the link name for this database that appears in the **Database | Change Active** list and other places. It does not alter the database Filename. If you leave this field blank and browse to the file you want to link to, the database filename will become the Link name.

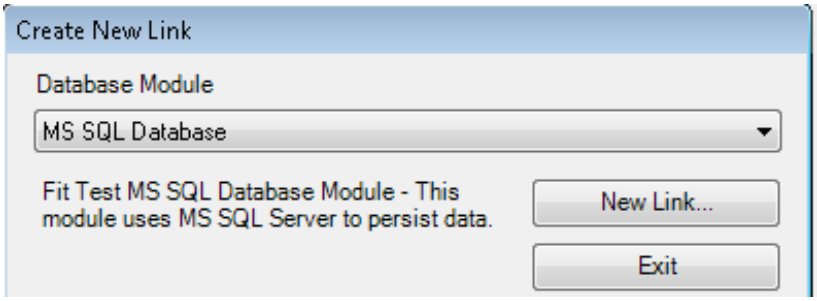
5. Click **Browse** and navigate to the folder that contains the Microsoft® Access® database you want to link to. To create a new database, navigate to the folder in which you want the database to be stored.



6. To create a new database, enter a file name in the blank File Name field and click **Open**. To select an existing database, select the file using the mouse and verify that the file name appears in the File Name field, and then click **Open**. The Create Database Link dialog box is redisplayed with the Link Name and Database File fields completed.
7. Click **Save**. If you created a new database you will be asked to verify that was what you wanted to do. Click **Yes** and the database will be created and added to the list of links. It will automatically become the active database. If you selected an existing file, you will be asked to verify that was what you wanted to do. Click **Yes** and the database will be added to the list of links and become the active database. Now that a link is created, you can easily select this database by its link name without browsing to a file or server each time.

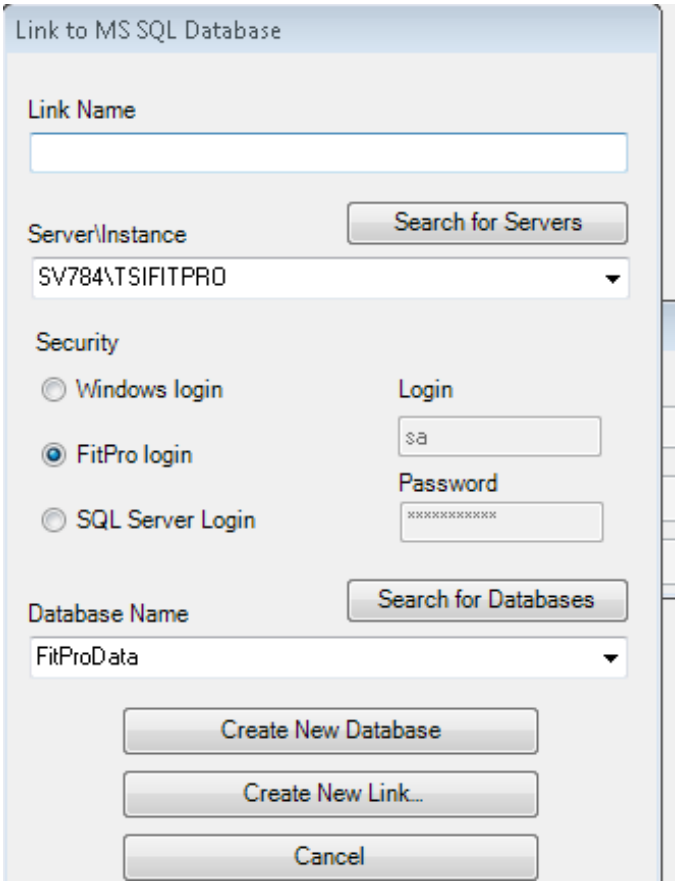
To Link to an existing FitPro v2 MS SQL database or create a new MS SQL database on an existing FitPro v2 server instance:

1. Select **Database** | **Manage Database Links | Create New Link.** The Create New Link dialog box appears.


Create New Link
Database Module
MS SQL Database
Fit Test MS SQL Database Module - This module uses MS SQL Server to persist data.
New Link...
Exit

2. Select **MS SQL Database** from the drop-down list. Options are Access Database and MS SQL Database.

3. Click **New Link**. The Link to MS SQL Database dialog appears.

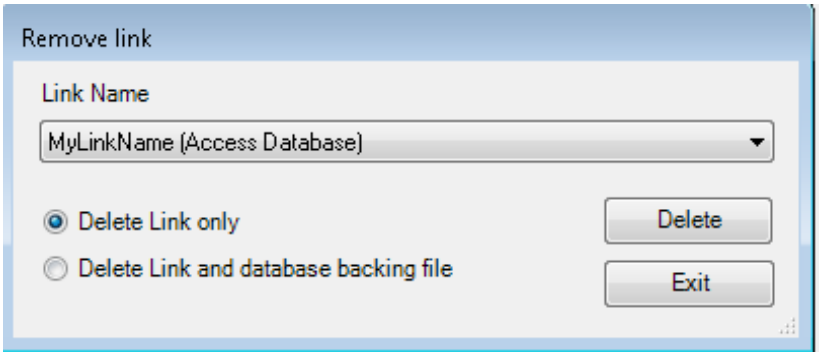


4. Enter a Link Name. This can be any name you choose. It will become the link name for this database that appears in the **Database | Change Active** list and other places. It does not alter the database name.
5. Click **Search for Servers**. If there is an SQL server running on your computer or available on your network, they will appear in the Server list. Use the drop-down arrow to select the desired server.

   ***Note**: You can also type in a specific Server name and Instance supplied to you by a system administrator.*
6. For existing FitPro v2 software databases, select **FitPro Login** under the Security options (unless otherwise instructed by a database administrator in your organization).
7. Click **Search for Databases** and select the database you want to link to. If you are creating a new database you must fill in this field with the name that you want to use for the backing SQL database.
8. Click **Create New Link** and the database will be added to the list of links and become the active database. Now that a link is created, you can easily select this database by its link name without browsing to a file or server each time. Alternatively, you can click **Create New Database** and a new SQL database will be created. The database will be added to the list of links and it will become the active database.

To remove a link to a database or to delete the database backing file:

1. Select **Database | Manage Database Links | Remove Link**. The Remove Link dialog box opens.



2. Select the name of the link you want to remove from the Link Name box using the drop-down arrow.

Note
You cannot delete the active database link. You cannot delete the backing file of an SQL database.

3. Select **Delete Link Only** (*deletes the link but retains the database*) or **Delete Link and Database Backing File**.

Note
"**Delete Link and Database Backing File**," deletes both the link and the database.

4. Click **Delete**. You will be required to verify your action.

Data Record Tools

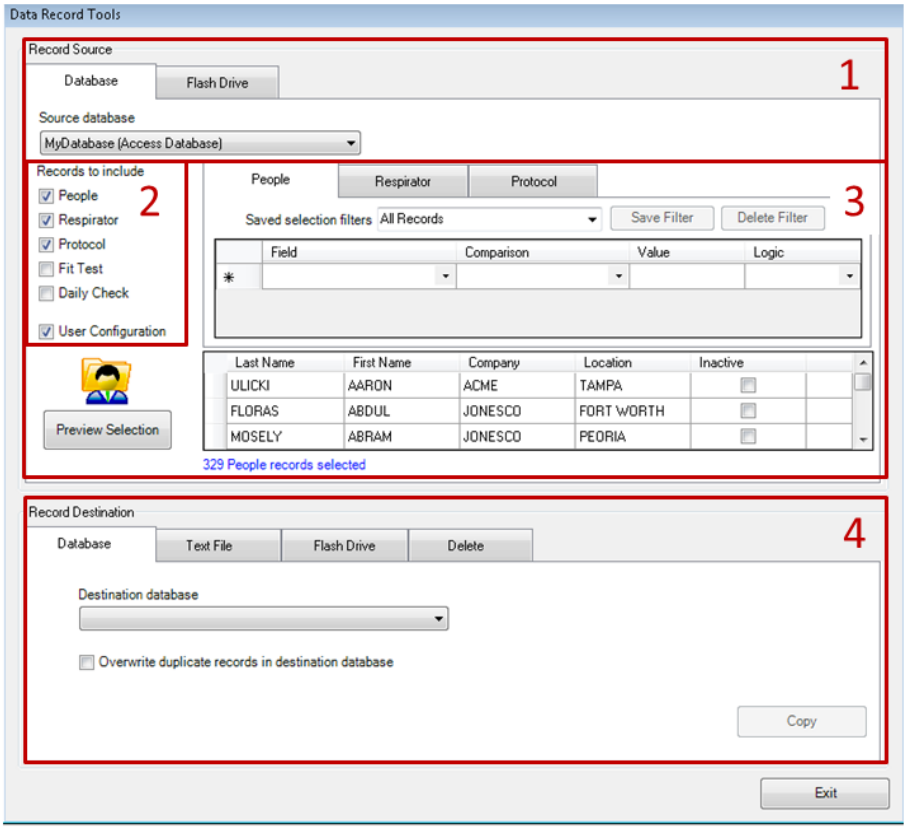
The Data Record Tools feature includes a powerful tool set that allows you to manipulate records quickly and easily with a single interface. Operations that can be performed with the Data Record Tools include:

- Import and export XML files for Flash Drive Exchange. This is commonly used to prepare and export People, Respirator, and Protocol information to be used with a stand-alone PortaCount Fit Tester, and its import test data after performing a series of fit tests.
- Export records to a delimited text file for import into third party applications such as Microsoft® Excel® software.
- Copy records from one database to another
- Merge databases
- Split a database
- Delete records from a database

The Data Records Tool dialog is shown in the figure below. Generally speaking, there are four steps to most operations.

1. Select a source database. This can be Access, SQL, or an XML file.

2. Select Record types to include.
3. Optionally filter the records. See Advanced Record Selection and Filtering for details.
4. Select a destination for the records. This can be another database, a text file, an XML file on a flash drive. It can also be deletion of the records.



Flash Drive Database Exchange

This function lets you export the FitPro+ software database to a flash drive so you can operate the PortaCount Fit Tester in Stand-alone and save the fit test data to a flash drive. Once fit testing is complete, you can import the fit test data into the FitPro+ software database.

On the PortaCount Pro Fit Tester, data is stored on a flash drive in XML format. The exchange function copies records from FitPro+ databases into the XML (the data format used by PortaCount Pro Fit Tester). It is recommended that you verify the data after it is exported.

Data Record Tools has two sections—one for exporting data and one for importing data. The fields and buttons for each portion of the dialog are described in the following subsections.

The flash drive XML database is limited in size to 1 MB. 1 MB is equal to approximately 420 People Records and 420 Fit Test Records. You can minimize the size of the XML database by exporting only specific records, such as only those people who will be fit tested that day.

Export a FitPro+ Database to the Flash Drive (XML Database)

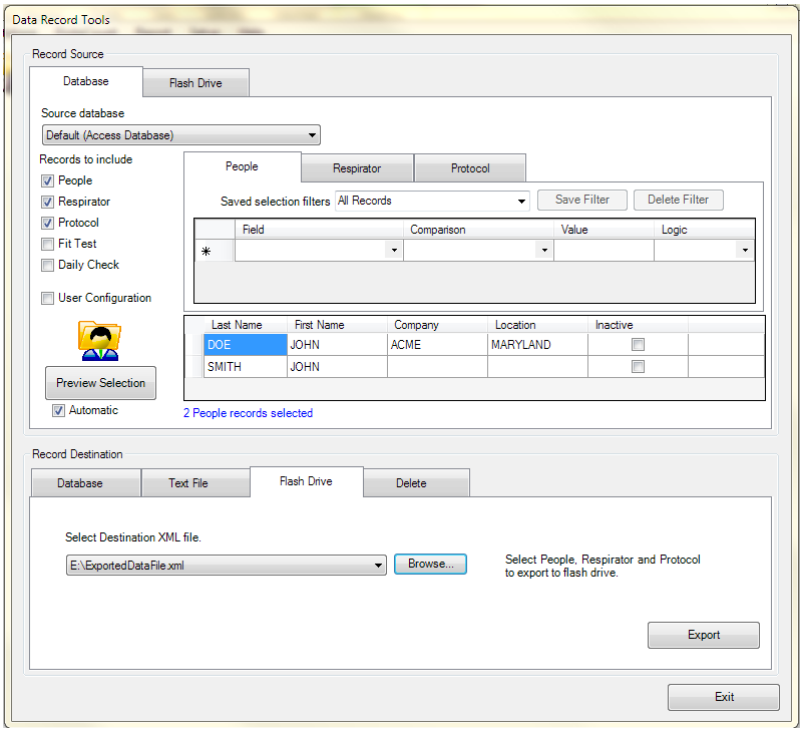
1. Insert a flash drive in an available USB port on your personal computer.
2. Select **Database | Data Record Tools**.
3. In the **Record Source** section, select the **Database** tab, and then select the database from which you want to export records. By default, FitPro+ software selects the current active database as the source database. Exporting a database does not delete or modify the original database file in any way.
4. Under Records to include select three record types: People, Respirator, and Protocol. You can optionally filter these records to create a smaller XML file. Refer to Advanced Record Selection and Filtering.

Notes

Inactive records are automatically excluded from the flash drive export.

You must select People, Respirator, and Protocol under Records to include before the **Export** button will become enabled. Only those record types will be exported to the Flash Drive file even if other types are selected.

5. In the Record Destination section on the bottom section of the screen, click on the Flash Drive tab. **Browse** to select the XML file on the Flash Drive that you want to export data to. (You may need to create a new filename.). A message indicates success or failure.
6. After you have selected a Source Database and a Destination XML file, click **Export** button to perform the operation.
7. Eject the flash drive from the computer and insert it in an available USB port on the PortaCount Pro Fit Tester. Verify People, Respirator, and Protocol records exist using the PortaCount touch screen.



8. Refer to the *PortaCount Pro Respirator Fit Tester Operation and Service Manual* for further information.

Import a Flash Drive Database into a FitPro+ Software Database

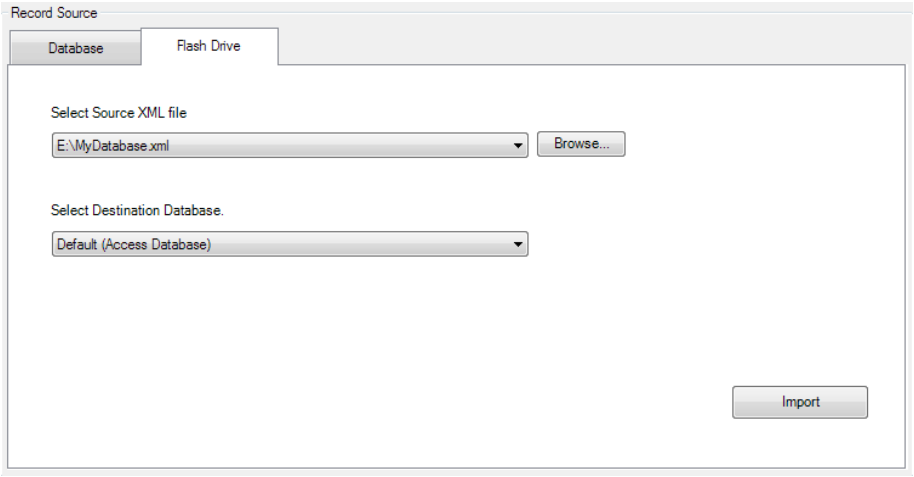
This feature imports any new People, Respirator, and Protocol data. It also imports any Fit Test and Daily Check data added when the file was used on the PortaCount Pro Fit Tester in Stand-Alone mode.

1. Remove the flash drive from the PortaCount Pro Fit Tester and insert it in an available USB port on your computer.
2. Select **Database | Data Record**. Select the Record Source tab called **Flash Drive.**
3. Use the **Select Source XML file** field and the down arrow or **Browse** to display the name of the database (*xxx*.xml) on the Flash Drive you want to import to FitPro+ software. Generally, this is the same XML file you initially exported to the Flash Drive, but you can select a different filename. Importing a database does not delete or modify the Flash Drive database file in any way.

Caution

Importing data from Flash Drive to FitPro+ software will modify the destination database by adding new records or updating existing records.

4. Use the **Select Destination Database** field and the down arrow or **Browse** to display the FitPro+ Access or SQL database link that you want to import data to.. Generally, this is the same database file you initially used to export to the Flash Drive, but you can import the data to any database or create a new database filename.
5. When the correct database file and XML files are displayed, click **Import**. A message indicates success or failure.
6. Select **Database | Edit | People Table** to verify the records were imported successfully.



Export

FitPro+ data can be exported to delimited text file format.

To export (transfer) data to programs that cannot read Microsoft® Access® format, select **Database | Data Record Tools**.

1. In the Record Source section select the **Database** tab and select the Source database (the database from which you want to export records). By default, FitPro+ software selects the current active database as the source database. Exporting a database does not delete or modify the original database in any way. Under **Records to include** select any of the record types that you wish to export. You can optionally filter these records. Refer to Advanced Record Selection and Filtering.
2. In the Record Destination section, select the **Text File** tab. By default, the **Destination** filename is automatically created reflecting the source database name and record type. To select a different file, click **Browse** and find or create a new filename. (The file extension is added for you.).

WARNING

If you select the name of an existing file, the file will be overwritten.

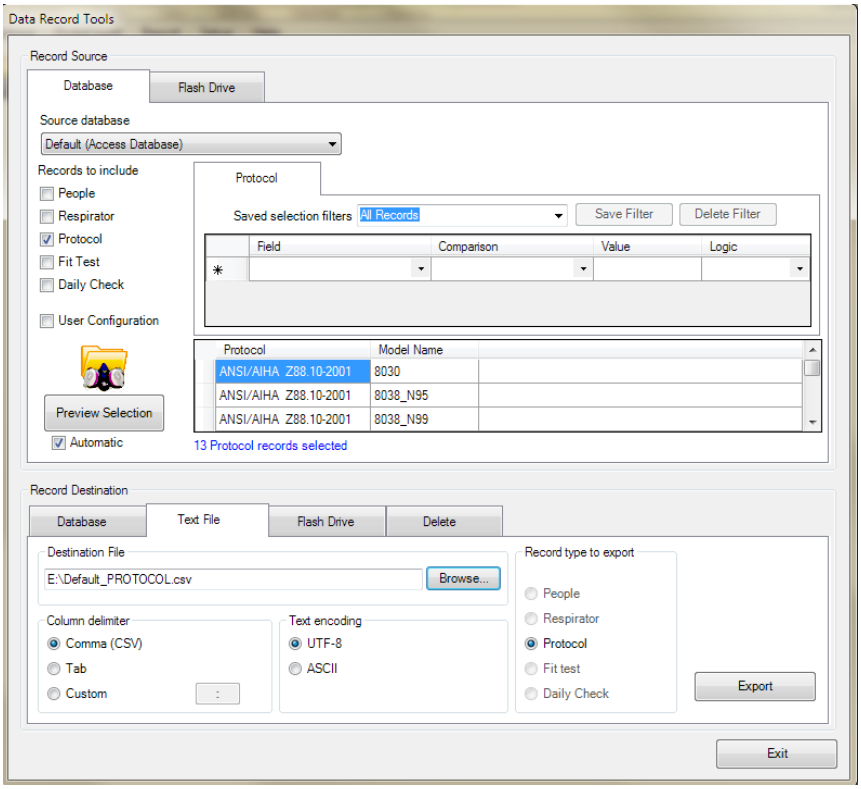
3. Select a Column delimiter and Text encoding. The delimiter can be Comma, Tab, or Custom. A CSV file is a text file with each record from the table on one line. Each data item is enclosed in quotation marks (“) and delimited with a comma (,).

Note

Microsoft® Excel® spreadsheet software can open a comma delimited file.

4. Use **Record type to export** to select which table you want to export data from. This selection is limited by the Record types you chose to include from the Destination source. You can only export one table at a time, but automatic file naming makes exporting a group of record files very easy.

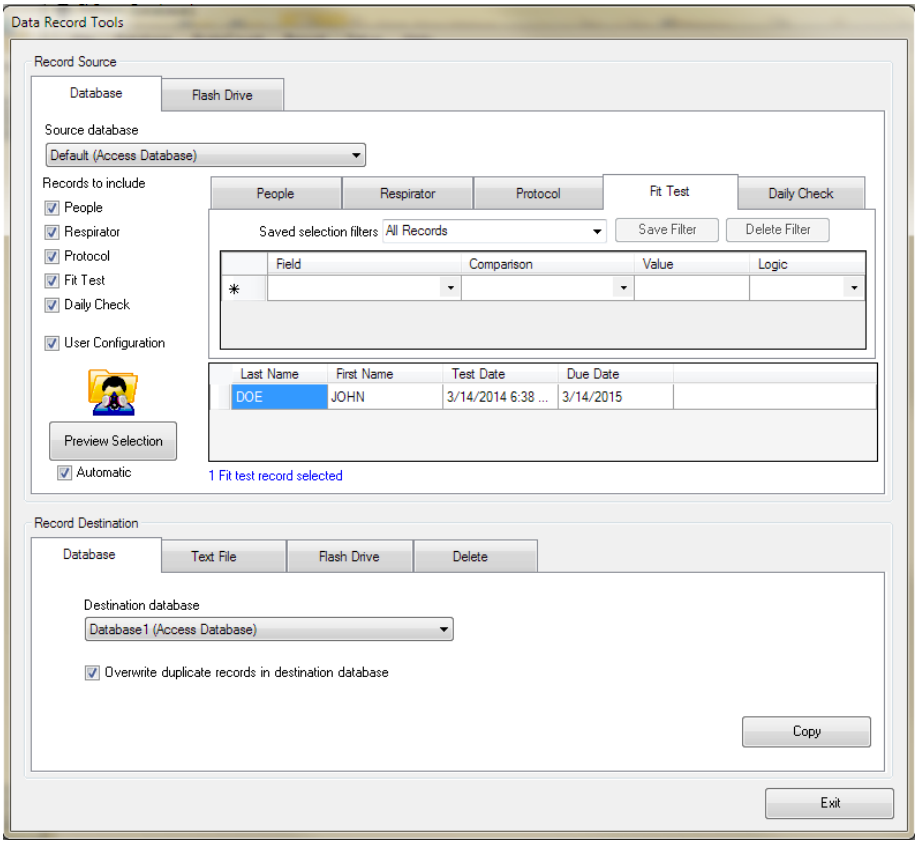
5. Click **Export** to execute this function. The data is copied from the source database to the destination file and a message appears verifying the operation.



Database Copy/Merge/Move

1. To create a copy of a database select **Database | Data Record Tools**.
2. In the Record Source section, select the **Database** tab and the Source Database from which you want to copy records. By default, FitPro+ software selects the current active database as the source database. Copying a database does not delete or modify the original database in any way.
3. Under **Records to include** select all of the record types available. You can optionally filter these records. Refer to Advanced Record Selection and Filtering.
4. To perform a **Copy** operation, in the Record Destination section, select the **Database** tab. From the Destination Database list, select <**New…**> to create a new database. To perform a **Merge** operation, select an existing database that you want to merge the Source Database into.

5. You have the option to Select **Overwrite duplicate records**. By default this option is unchecked. You must check it to copy the user configuration file. Select **Overwrite duplicate records** whenever you want to update records in the destination database with updated information from the source database.



6. If you want the records to be *moved* from the source to the destination database then you must delete the same records out of the Source database. Do ***not*** change the source database or the filter criteria. Under **Record destination,** select the **Delete** tab. Select **Delete** to delete the selected records out of the Source database.

Backup and Restore

FitPro+ software automatically creates a backup copy of your active Access® database whenever you close the FitPro+ program. The backup file is located in the same folder as the database backing file. Up to five files will be kept. For example Default_1.bak is the most recent backup of the Default database. The automatic backup is useful in case the current database becomes corrupted or is deleted by mistake. You can also use the Copy function in Data Record Tools to create a copy of your database manually. To restore the backup file follow these steps:

1. When selecting the **Source database**, select **<New link>** and browse to the folder. Set the file type to **Backup files** (*.bak).
2. Under **Record to include**, select all records. Accept the default **All Records** filter.
3. For the destination database, select **New Database**.
4. Click on **Copy.**

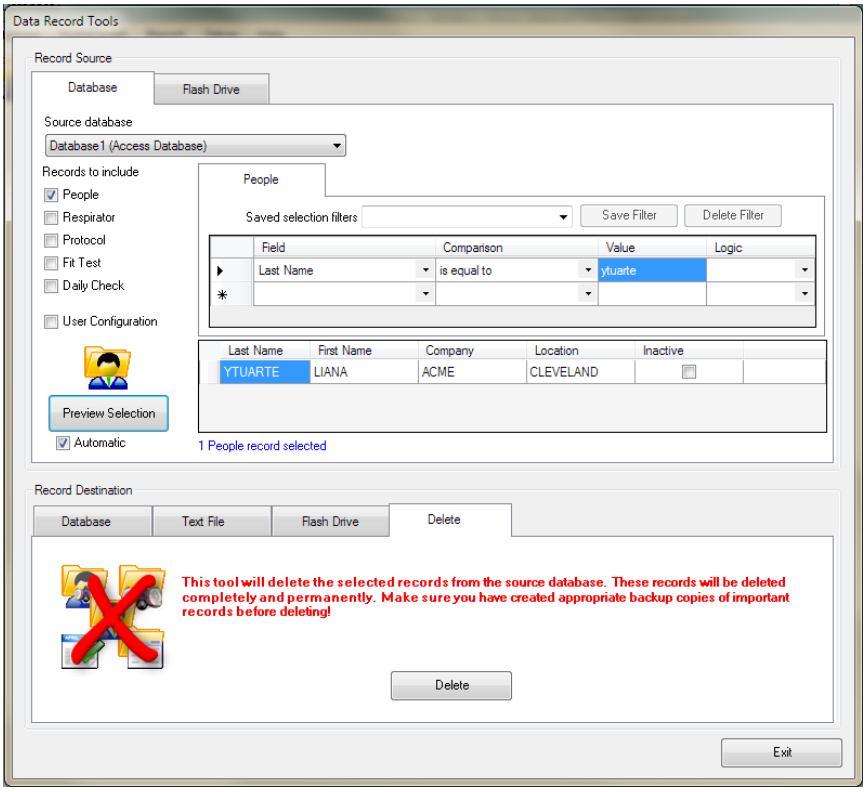
Delete

The Delete function lets you delete records from a database.

WARNING

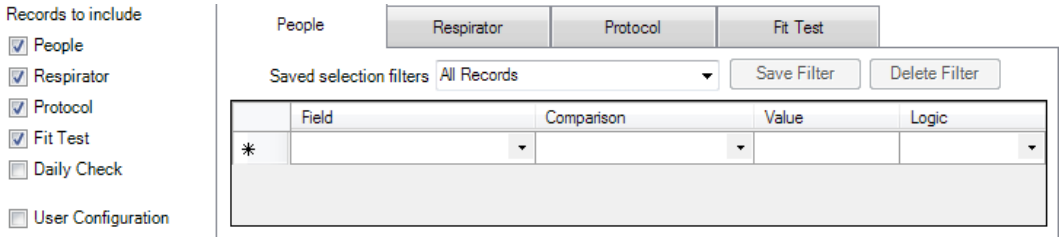
The **Delete** function does not provide any data validation or undo function. Any changes you make are immediately made in the Source database. It is recommended that you back up the data before deleting it.

1. To delete records select **Database | Data Record Tools**.
2. In the Record Source section select **Source** database and select the database from which you want to delete records.
3. Under **Records to include** select any of the record types that you wish to delete. You can optionally filter these records. Refer to Advanced Record Selection and Filtering.
4. In the Record Destination section select the **Delete** tab.
5. Select **Delete** to perform the operation. You will need to confirm the operation twice before the records are deleted.



Advanced Record Selection and Filtering

Data Record Tools allows you to define which records you want to manage in your Source database. First decide which records to work with by selecting the check boxes under "**Records to include….**" Options are People, Respirator, Protocol, Fit Test, Daily Check, and User Configuration.



For each record type that you select (except User Configuration) a tab appears in the Filter region. On each tab is a "**Saved Selection Filter**" drop-down box. There are pre-programmed filters for each tab which cannot be edited or deleted. The default filter is called **All Records**. Use the **All Records** filter if you want to include all the records from the Source database table.

To further filter the record table, you can set up a user-defined filter with the procedure described below. To delete a user-defined filter, select the filter from the "**Saved selection filters**" box and click **Delete Filter**.

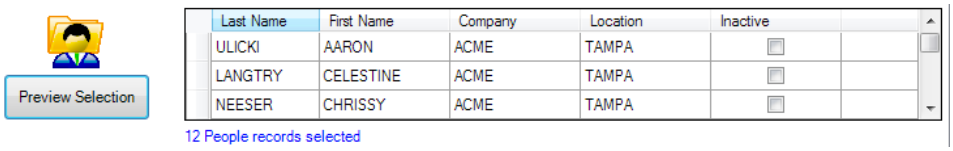
1. Click in the first line of the Field column. A drop-down box displays all the fields in the selected record type. Descriptions of these fields are provided in Editing Record Tables. Select the field that you would like to include in the filter.
2. Click in the Comparison column and select an operator. The available operators are shown in the table below.
3. Click in the Value column and select a value. Typically the values are text-based and the comparisons are alphabetical. Even if a field holds a number (i.e., ID Number), the comparison will be alphabetical, so, "123" will be considered less than "23" because alphabetically, a "1" character will come before the "2" character. There are a few fields that are Date/Time values and some that are True/False.

Application of Operators and Values	
Comparison Operator	**Usage**
Is equal to / Is not equal to	Use these comparison operators when you know the exact value. Some common examples include: • Boolean fields such as the N95 field in the Daily check records or the Inactive field in the People record. Here the Values are True or False. • Date fields where the Value can be selected from a calendar. • Fields with blank values. You can use the "equal to" Comparison and leave the value field blank. That will match all records that have a blank value in the selected Field. Conversely, to find all records non-blank values in the selected Field, use the "is not equal to" Comparison and leave the Value field blank.

Application of Operators and Values	
Comparison Operator	**Usage**
Is greater than / Is less than / Is greater than or equal to / Is less than or equal to	These comparison operators are good choices when working with Date ranges.
Starts with	Use this comparison operator when working with complex pattern matching. In its simplest tasks, it can be used to find records with field values starting with a specific letter or string of letters. For more advanced pattern matching, additional wildcard characters can be used. Common examples include: • Place a percent symbol (%) at the beginning of the Value entry to match a string of characters in the middle of a word. • The underscore character (_) will match any single character • A list of characters of a range of characters can be selected by placing them within brackets ([]), i.e. “[a,c,g]” (matches fields starting with a, c, or g) and “[a-d]” (matches fields starting with a, b, c or d). • Adding an exclamation mark (!) inside brackets ([]) will find all values that *do not match* the given character string

4. Optionally, you can click in the Logic column to create an additional filter criteria. Options are AND or OR. Selecting either value will add another line and you can build another logic criterion. Although it is possible to use both AND and OR in a single filter, it is seldom useful. For best results create filters using either AND or OR.

5. When selecting filter criteria, verify the results by clicking **Preview Selection**. The Preview Table will display a sample of the records. Underneath the Record table is a summary of the number of records resulting from the filter.



6. When you are done building your filter criteria, you may want to save the filter so that you can reuse it. Type a name for in it the “**Saved selection filters**” box. Select the **Save Filter** button.

Split a Database

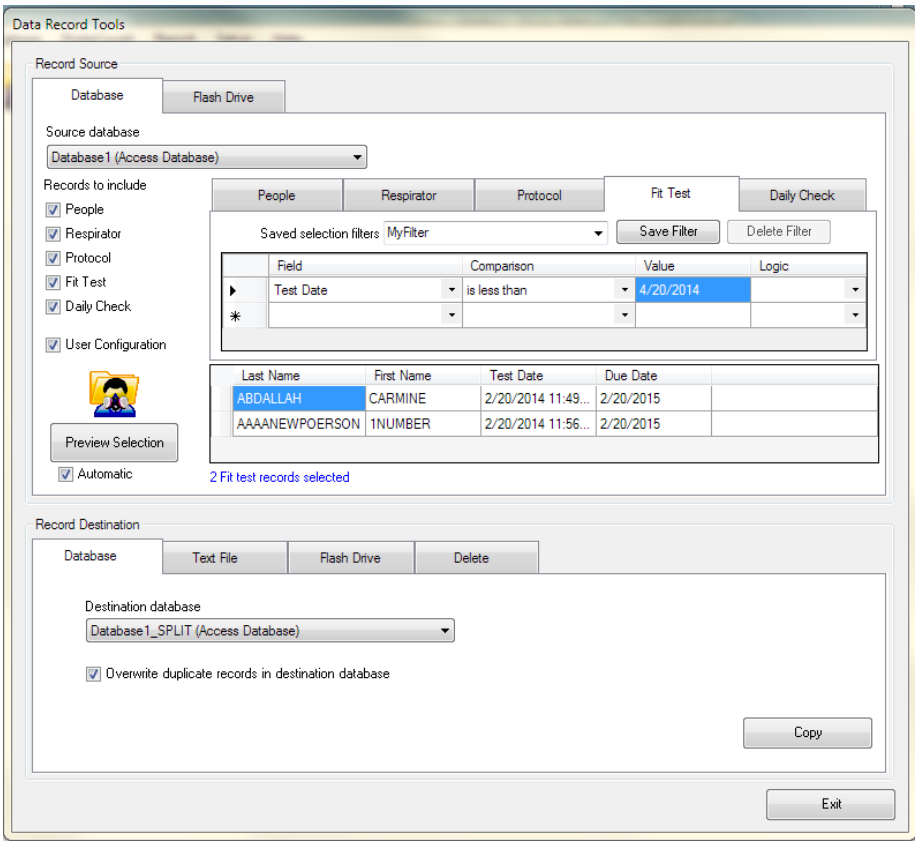
It is sometimes useful to split up a database when it is too large to manage or the FitPro+ software performs database functions slowly. You can split up the database by any convenient criteria. This example will show how to split fit test and daily check records by date.

1. By default, the active database is selected as the **Source Database**. To split a different database, click **Browse** to find the database you want to split.

2. Under **Record to include** select all records.

3. On the Fit Test tab select **Test Date** for the filter Field. Select **is less than** for the Comparison Operator. Select a date for the Value. Select **Preview Selection** and verify the records selected by the filter.

4. On the Daily check tab select **Test Date** for the Field. Select **is less than** for the Comparison Operator. Select a date for the Value. Select **Preview Selection** and verify the records selected by the filter.
5. Do ***not*** filter any of the other record types.
6. For **Destination database** select **New Link** from the drop-down list. Create a new database.
7. Select **Overwrite duplicate records**.
8. Select **Copy** and wait for Copy status to complete. Confirm the copy completes.



9. Next prepare to delete the records out of the Source database. Under "**Records to include**" unselect **People, Respirator, Protocol,** and **User configuration**. Only fit test records and daily check records should be selected. Do ***not*** change the Source database or the filters. Under **Record destination**, select the **Delete** tab. Select **Delete** to delete the selected records out of the Source database.

(This page intentionally left blank)

CHAPTER 5

Create, Modify, and Print Reports

The report function lets you view data in a report (tabular) format. FitPro+ software provides eight pre-defined reports and the option of creating many custom reports.

The pre-defined reports are:

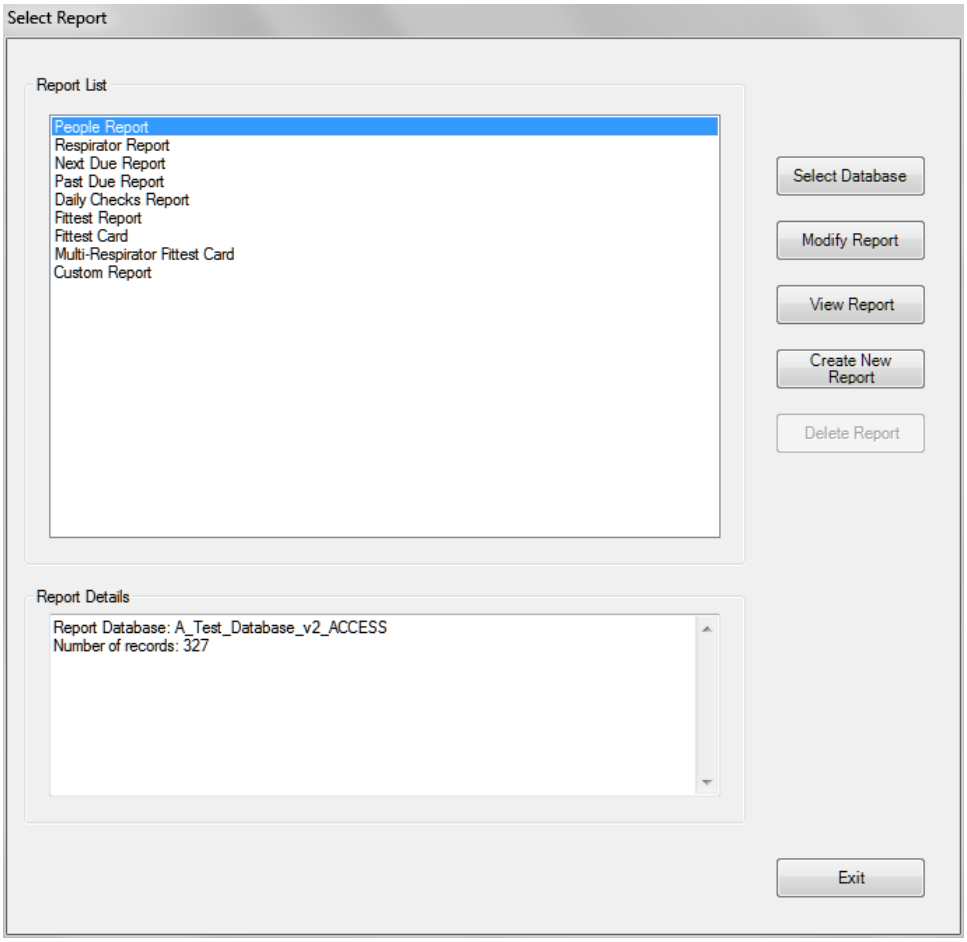
- People Report
- Respirator Report
- Next Due Report
- Past Due Report
- Daily Checks Report
- Fit Test Report
- Fit Test Card
- Multi-Respirator Fit Test Card
- Custom Report

The pre-defined reports are the most commonly used. They can be modified to some extent to accommodate user criteria.

The custom reports let you select a unique report name, select the database table, fields that should appear in the report, data selection criteria, fields to sort data, and the order of fields in report.

To access the reports function:

1. Select **Report** | **Select Report** or click . The Report Selection dialog appears. The name of the database file used for the reports is shown in the **Report Details** window. By default, this is the active database. Click **Select Database** to choose another database. The reports that are available are shown in the **Report List** window. Click on a report name in this list and the number of records for that report is shown in the **Report Details** window.



The following table describes the fields and buttons in the Report Selection dialog.

Button or Field Name	Description
Create New Report	Create a custom report using the Report Wizard (see below). The wizard lets you select the type of data and its presentation in the report.
Delete Report	Active only when you have selected a custom report. Click it to remove all information about the report. The pre-defined reports cannot be deleted.
Exit	Closes the dialog box.

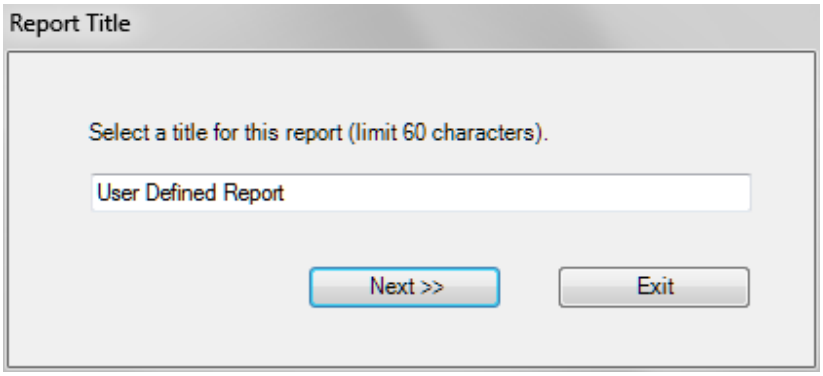
Button or Field Name	Description
Modify Report	Displays dialogs that let you modify the report highlighted in the Report List window. You can change the filter used to select records and the sorting order of the records.
Report List	The names of the pre-defined and custom reports (if there are any).
Report Details	Shows the report database (link) and number of records contained in the report highlighted in the Report List window. The number of records changes depending on the database file and the report selected.
Select Database	Opens a dialog box that lets you choose another database for report purposes. ***Note:*** *Selecting another database in this dialog box does not change the active database used for fit testing.*
View Report	Displays the report. In the case of fit test reports and fit test cards, displays the first report in the set. Click → to view the next report in the set. Click ← to view the previous report in the set. Use the magnifier to zoom in or out on the report. Click **Exit** to return to the Select Report dialog. Click **Print** to print the report. Click **Print Setup** to view page settings. Refer to FitPro+ Software Printing later in this chapter for further details.

The Report Wizard

The Report Wizard guides you through the process of modifying a pre-defined report and the creation or modification of custom reports. You can start the Report Wizard by selecting Custom Report in the Report List and then clicking **Modify Report**. If you are modifying an existing report, the Wizard will skip to step 4 below. The first three steps occur only when you create a new custom report.

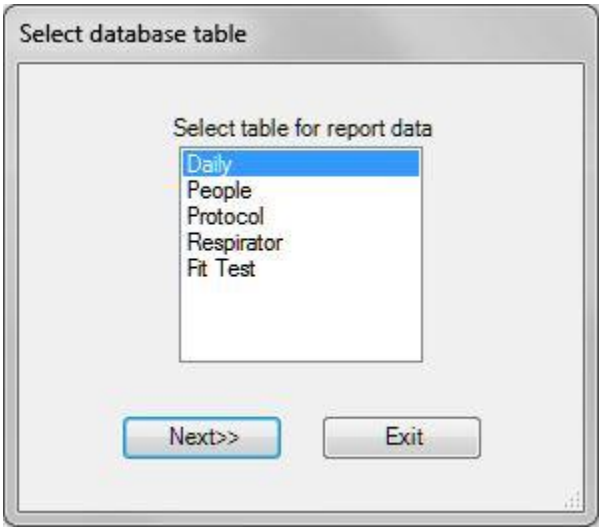
1. **Report Title**

   Enter a name for the report then click **Next>>**.



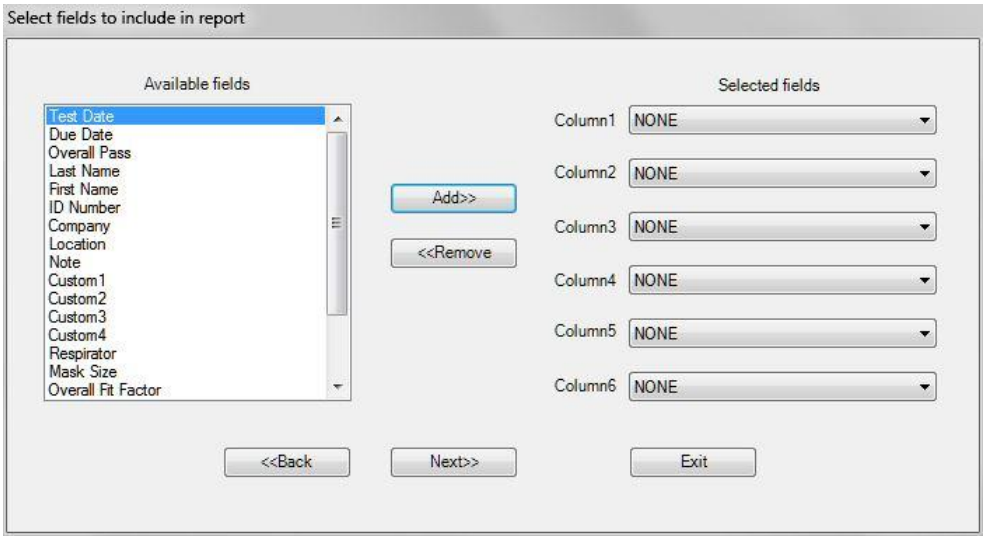
2. **Select Database Table**

   Lists the record tables in the database that you can select to generate reports. Click the name to select the corresponding table then click **Next>>**.



3. **Select Fields to Include in Report**

   Displays all available fields from the selected record table in the **Available Fields** column. (Example below shows the dialog box when 'Fit Test' is selected.)



   a. To add fields to the report, select the field you want to use and then click **Add**. The field appears in the **Selected fields** list (filled top to bottom).

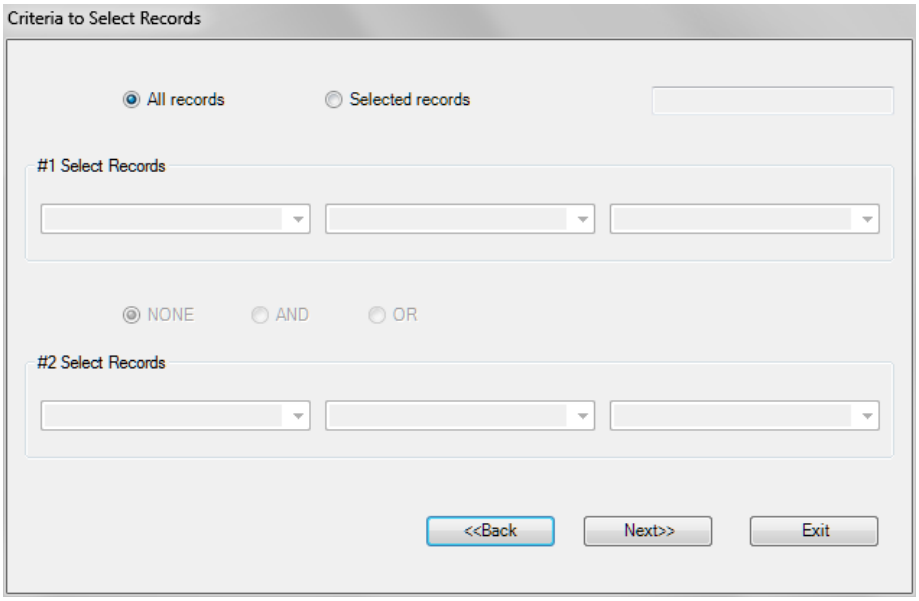
   b. To remove a field from the **Selected fields** column, select it and then click **Remove**.

   c. To rearrange the order of the fields, click on the down arrow for the column and then select the field you want for that column.

   d. Click **Next>>** when finished.

4. **Criteria to Select Records**

The **Criteria to Select Records** dialog lets you select the records you want to appear in the report.



a. To include all records in the report, click **All records**.

b. To include selected records only, click **Selected records** and then choose the field you want to use for filtering in **#1 Select Records.** You can select criteria such as **Company**, **Last Name**, etc.

c. Then select the filtering operation, such as “equal to” or “greater than.”

d. And finally, the specific filter criteria, such as true/false. You can include a second criteria by clicking **AND** or **OR** and completing the **#2 Select Records** section.

e. Click **NONE** to use no second criteria.

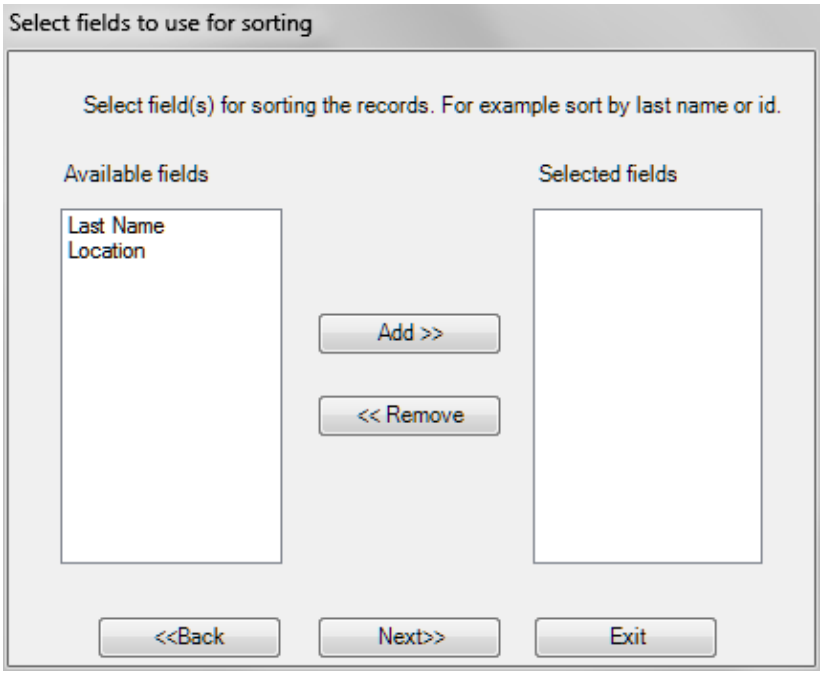
f. Click **OR** to select records that satisfy the first or second criteria.

g. Click **AND** to select records that satisfy the first criteria and the second criteria.

h. When finished selecting criteria, click **Next>>** to continue.

5. **Select Fields to use for Sorting**

   This dialog lets you select a set of fields on which to sort the records. The order of the fields in this column determines the sort order of the fields in your report.



   a. To add a field for sorting, highlight the field name in the **Available fields** column and click **Add.** You can add up to four fields for sorting. Any fields you add to the list appear in the **Selected fields** column.

   b. To remove sort fields, highlight them in the **Selected fields** column and click **Remove**. The name moves back to the **Available fields** column and is not used for sorting.

   c. Click **Next>>** to continue.

   d. On the last dialog of the wizard, clicking **Next>>** will cause the wizard to save the report settings and close. The new Report will appear in the report list.

   e. Clicking **Exit** will cause the Wizard to close without saving the new report.

   Note: *For more information and examples on creating and modifying custom reports refer to the RESFT305: Reports: Modification & Creation instructional course located at the PortaCount Academy Online Training Center website: www.tsi.com/pcacademy*

FitPro+ Software Printing

You can select and save default report and card print settings such as printer selection, page orientation, and margins. Select menu **File | Report Print Settings** or **File | Card Print Settings** to display the Page Setup dialog to set those defaults. If you have elected to automatically print Fit Test reports on the **Global FitPro+ Options** form, at the end of a Fit Test the report will be printed automatically from the selected report printer. If you have also elected to print a Fit Test card, a Fit Test card will be printed automatically from the selected card printer.

Single Fit Test Report

When you select **Report | Single Fit Test ...** the “Edit Fit Test Table” dialog appears (see Edit or View the Fit Test Table in Chapter 4 for a description of the dialog box. To print a single Fit Test report, select the person who’s Fit Test you want to print and click **Print Report**. The report is sent to the default printer. You can also print a Fit Test card by clicking **Print Card**.

Removable Fit Test Card Options

Each Single Fit Test Report is printed with a Fit Test card at the bottom of the report unless you uncheck the 'Show card on fit test report' option on the Global Fit Options dialog (see Global FitPro+ Options in Chapter 1.

TSI sell Stock Card Forms which come with a thin plastic punch-out card so that this fit test card can easily be removed (P/N 803X-CRDFRM). The stock card forms sold through TSI are compatible with most commercially available ink-jet and laser printers, though a laser printer is recommended. The Company Name field located at the bottom of the Removable Fit Test Card can be customized through the Fit Test Card Options dialog in the FitPro+ software:

1. Select **Setup** | **Global Fit Test Options**.
2. Click **Fit Test Card Options**.
3. Enter the company name if desired. No other portion of the fit test card dialog affects the fit test report. Margins must be managed through **File | Report Print settings**. Refer to Chapter 3 - Report Print Settings for more details.

The following page shows an example of the Single Fit Test report with the Fit Test card enabled.

FIT TEST REPORT

3/14/2014

ID NUMBER	1111		
LAST NAME	DOE		
FIRST NAME	JOHN		
COMPANY	ACME		
LOCATION	CLEVELAND		
TEST DATE	3/14/2014	**PORTACOUNT S/N**	8038112907
DUE DATE	3/14/2015	**N95 COMPANION**	N
RESPIRATOR	MLFT INC 1000 FULL FACE [500]	**PROTOCOL**	OSHA 29CFR1910.134
MANUFACTURER	MLFT INC	**PASS LEVEL**	500
MODEL	1000		
MASK STYLE	FULL FACE	**APPROVAL**	
MASK SIZE	MEDIUM	**EFFICIENCY<99%**	False

EXERCISE	DURATION (sec.)	FIT FACTOR	Pass
NORMAL BREATHING	64	1807	Y
DEEP BREATHING	64	447818	Y
HEAD SIDE TO SIDE	64	65852	Y
HEAD UP AND DOWN	64	298010	Y
TALKING	64	66444	Y
GRIMACE	15	Excl.	
BENDING OVER	64	124047	Y
NORMAL BREATHING	64	106966	Y
OVERALL FF		11539	Y

FIT TEST OPERATOR _____ **DATE** _____
MG

NAME _____ **DATE** _____
JOHN DOE

Note:

Respirator Fit Test Card

Name: JOHN DOE — Test Date: 3/14/2014
ID: 1111 — Next Test Date: 3/14/2015

Respirator
Mfg: MLFT INC
Model: 1000
Style: FULL FACE
Size: MEDIUM

Results
Overall FF: 11539
FF Pass Level: 500
Pass: Y
Operator: MG

Protocol: OSHA 29CFR1910.134
Fit Test Method: QNFT using TSI PortaCount
*** Your company contact information here ***

CHAPTER 6

Troubleshooting

This chapter lists a series of symptoms, their possible causes and recommended solutions for problems encountered when using FitPro+ software. Additional information on using the PortaCount Pro Fit Tester may be found in the Operation Manual.

Symptom	Possible Causes	Solution
When a PortaCount Fit Tester is plugged into your computer, a message appears from your operating system similar to: "Windows® has detected new hardware" and you are asked to install drivers.	Connectivity issue between PortaCount Fit Tester and computer – NDIS drivers are not installed.	***Windows® 7 & 8 users****: The Device Drivers will be installed during the software installation process as described in Chapter 1.* ***Windows® XP users****:* The computer will display a "New hardware found" box at the bottom right of your screen. During the software installation process the PortaCount fit tester drivers were loaded onto your computer. It may be necessary to use the Found New Hardware wizard to install the drivers on Windows® XP operating system. If there are any issues with the Device Driver installation refer to the RESFT 201: PortaCount Pro-to-PC Communications instructional course located at the PortaCount Academy Online Training Center website; www.tsi.com/pcacademy.
Windows® operating system shows that a USB device is not recognized when the hub is plugged in.	Connectivity issue between USB hub and computer.	1. Verify whether your USB hub requires a driver; if it does, install it. 2. Power all PortaCount Fit Testers down. 3. Plug hub in. Verify the computer recognizes the hub. 4. Power all the PortaCount Fit Testers up and reconnect them to the hub.
FitPro+ software does not show a connection to all PortaCount Fit Testers or the Connectivity icon displays a broken connection.	USB connectivity issue *or* PortaCount Fit Tester is not in External Control Mode.	1. Verify the PortaCount Fit Tester touch screen is set to the main Activities menu. 2. Reseat all USB connections. 3. Reselect the Connectivity button . 4. Reboot the PortaCount Fit Tester that is not connecting.

Symptom	Possible Causes	Solution
USB Hub has all LED's flashing on and off.	Connectivity issue between the hub and computer.	Reboot computer.
Message "To use the PortaCount Fit Tester remotely, unlock the instrument"	PortaCount Fit Tester is busy with an operation initiated from the PortaCount touch screen	1. Use the PortaCount Fit Tester touch screen to return the PortaCount Fit Tester to the main Activities menu. Then reinitiate External Control Mode by using the connectivity button on FitPro+ software. *or* 2. Reboot the PortaCount Fit Tester. ***Note**: FitPro+ software will be unable to lock the Model 8020M while a measurement is underway. Use the 8020M keypad to return the instrument to the "Fit Test" idle screen.*

APPENDIX A

Printing Fit Test Cards with an ID Card Printer

ID Card Printer Setup

TSI Incorporated does not guarantee that the FitPro+ fit test card printing features will function properly with each of the wide variety of ID card printers available on the market. Use of an ID card printer other than the models recommended by TSI is done at your own risk. TSI believes that FitPro+ card printing features will work with most Windows-compatible ID card printers, and recommends using the Fargo Persona C30e, DCT1000, C50 or comparable printer. Most card printer manufacturers will provide the necessary print settings with their product.

For Card Printer Supplies and Specifications please refer to the Card Printer manufacturer.

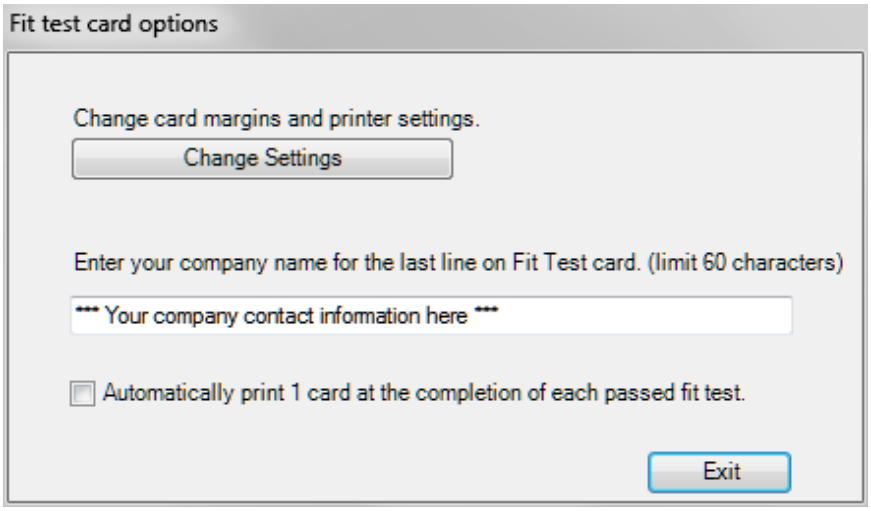
Refer to the installation and setup instructions provided by the Card Printer manufacturer.

FitPro+ software does ***not*** support color printing, be sure that the proper printer ribbon type has been selected under the printer settings. TSI recommends using the Fargo card printers with “K - Premium Resin” black only ribbon.

Configuring FitPro+ Software to Print with an ID Card Printer

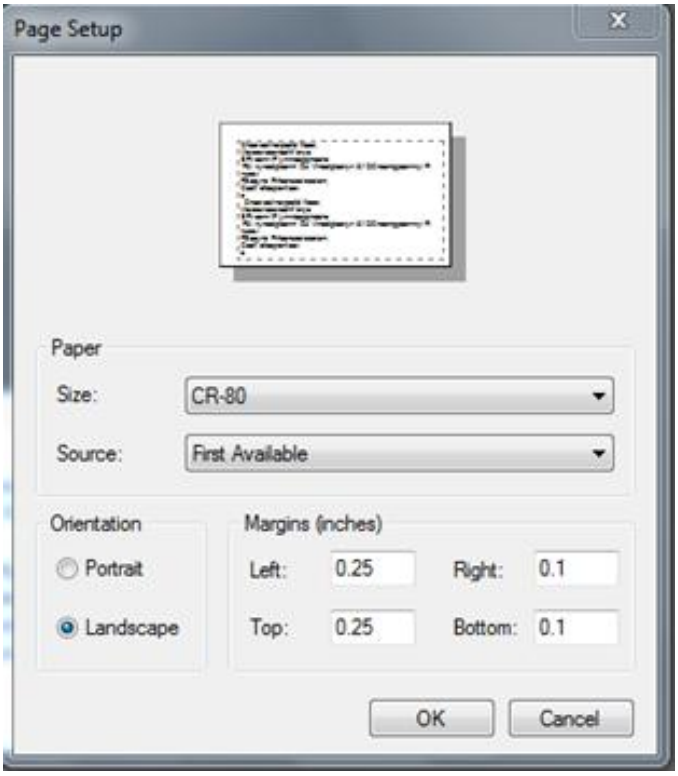
1. Start FitPro+ software on your computer. Select **Setup** | **Global FitPro+ Options**.
2. From the Global FitPro+ Options dialog, click **Fit Test Card Options.** The Fit test card options dialog appears.

Note
The first time you do this, you will get an Install Card Printer dialog message. Read and follow the directions in that message and click **OK**.


Fit test card options
Change card margins and printer settings.
Change Settings
Enter your company name for the last line on Fit Test card. (limit 60 characters)
*** Your company contact information here ***
Automatically print 1 card at the completion of each passed fit test.
Exit

3. **Enter your company name**. Text entered in this field will appear in Fit Test cards printed with an ID card printer. It will also appear in the removable card printed at the bottom of Fit Test reports.
4. If you want to print a card at the completion of every test, you can select **Automatically print…** This option is disabled by default. Alternatively, Fit test cards can be printed at any time from the **Edit Fit Test Table** dialog described in Chapter 4. Fit test cards can only be printed one at a time. There is no batch printing function. Automatic card printing does not affect Automatic report printing. Refer to Chapter 3 to set up automatic report printing.
5. In order to select the card printer and configure the card layout, click **Change Settings**. The **Report Preview** dialog appears. These settings only affect Fit Test cards printed with an ID printer. They do not affect Fit test reports. Refer to Chapter 5 for details on printing Fit test reports.
6. Click the **Page Setup** button, and use the **Assigned Card Printer** drop-down box to select the card printer you have connected.

7. Click **Card Printer Settings**. This opens the **Page Setup** dialog.



- Select the card size from the **Paper | Size** list.
- Select **Landscape** for orientation and select margins.
- Click **OK** button.

8. Card printing should now be functional. To print a test card, click **Print** button on the **Report Preview** dialog. You should see a print confirmation window pop up briefly and a sample card should print.

(This page intentionally left blank)

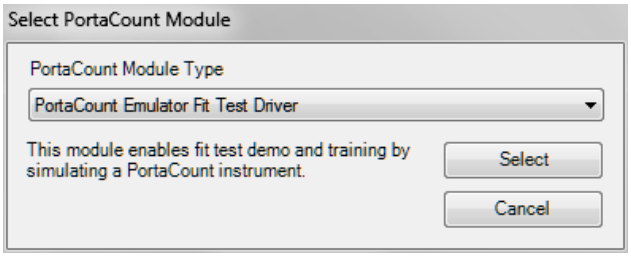
APPENDIX B

Using the PortaCount Emulator

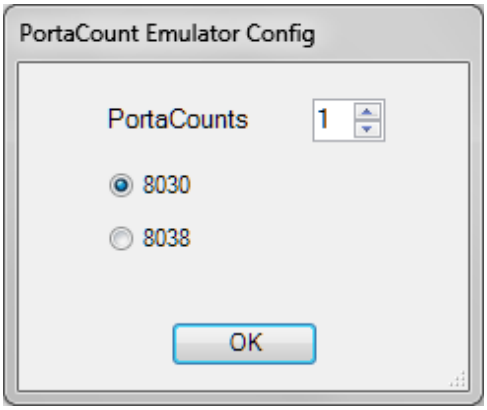
FitPro+™ software includes a PortaCount Emulator module allowing you to gain familiarity with how FitPro+ software operates without connecting to an actual device or tying up personnel to perform practice fit tests. With the emulator, you can train and familiarize yourself with FitPro+ software operations and experience common fit test issues you might encounter when performing actual fit tests.

Note
You cannot perform Daily Checks or show Real-time fit Factors with the PortaCount Emulator.

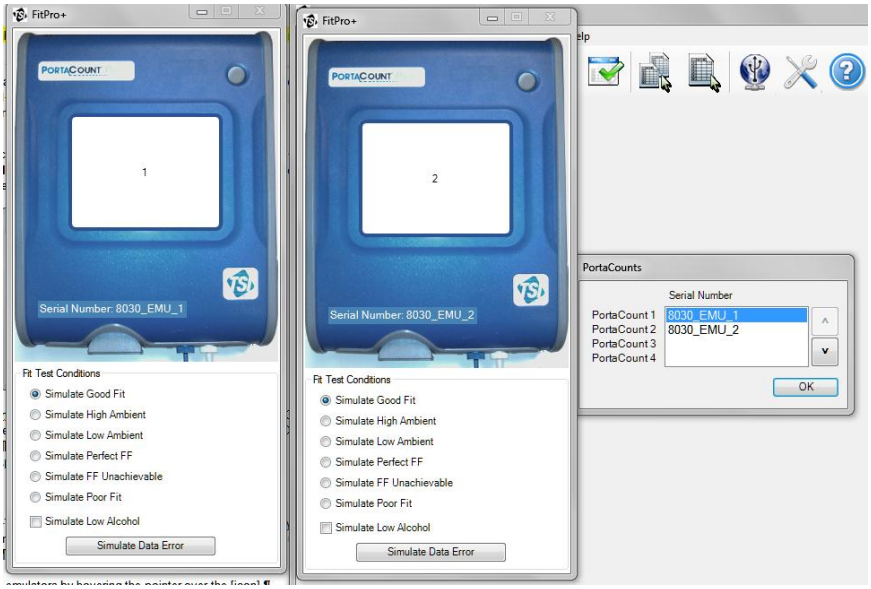
1. To start the Emulator, click **Setup | PortaCount Communications** or click the USB icon . The Select PortaCount Module dialog opens.


Select PortaCount Module
PortaCount Module Type
PortaCount Emulator Fit Test Driver
This module enables fit test demo and training by simulating a PortaCount instrument.
Select
Cancel

2. Select **PortaCount Emulator Fit Test Driver** from the PortaCount Module Type drop-down box and click **Select**. The PortaCount Emulator Config dialog box opens.



3. Select the number of PortaCount Fit Testers you want to emulate (1 to 4) and the model number (8030 or 8038), and click **OK**. An emulator dialog box appears for each of the PortaCount Fit Testers and you will see a dialog indicating the number of emulators that includes their serial numbers.



To verify the number of emulators, hover the pointer over the Connectivity icon . You can change the number of emulators you are using at any time.

4. Select a Fit Test Condition for each of the PortaCount Fit Tester emulators (you can select only one condition for each emulator). You can change the conditions when desired.

Note

On a fit test report, the serial number of the Emulator always has the form "803x_EMU_n," where x is 0 or 8 (indicating model 8030 or 8038) and n is the number of the emulator (1 to 4). *Fit tests performed using the Emulator module **are not** saved to the database.*

APPENDIX C

Using Multiple Fit Testers

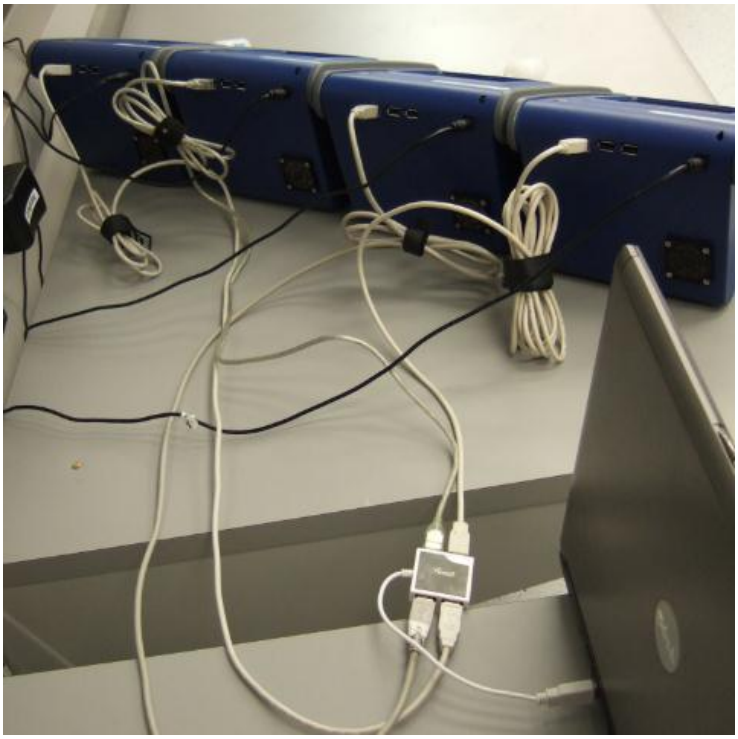
Note
The use of multiple PortaCount Respirator Fit Testers with one computer is not supported for Models 8020, 8020M, or 8028.

A single installation of FitPro+™ software can connect to up to four Model 8030 or Model 8038 PortaCount Pro® Fit Testers and perform synchronized fit testing on up to four test subjects at the same time. Operation with multiple instruments is very similar to operation with a single instrument. This section describes differences you will encounter when running multiple fit testers simultaneously. Please review this section before connecting multiple devices or performing any operations with more than one fit tester.

Setting up Multiple PortaCount Fit Testers

A 4-port USB hub is recommended to facilitate the connection of multiple PortaCount Pro Fit Tester connections to the personal computer. Many commercial hubs are available. Some require power and installation of drivers. Refer to the USB hub manufacturer directions for details. When performing fit tests with multiple PortaCount Fit Testers, they must all be of the same model. For instance, if one PortaCount Model 8030 Fit Tester and three Model 8038 Fit Testers are connected, FitPro+ software will recognize only one model. Set up multiple PortaCount Fit Testers as follows:

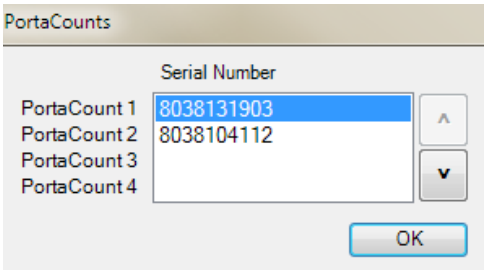
1. Start each of the PortaCount Fit Testers. Refer to Start the PortaCount Pro Fit Tester in Chapter 2 and the PortaCount Pro/Pro+ Operators Manual for detailed instructions on setup.
2. Wait for the TSI Splash screen to end and the main Activities menu to appear on each of the PortaCount Fit Testers.
3. Plug USB cables from each PortaCount Fit Tester to a USB hub and then connect the hub to your computer. Supply power to the USB hub if it requires it.



Note
If this is the first time you have attached the PortaCount Pro Fit Tester to your computer, you may be informed that Windows® has detected new hardware and you are asked to install drivers. Refer to Chapter 6 Troubleshooting.

Start FitPro+ Software and Check the Connectivity of all Devices

1. Launch the FitPro+ software on your personal computer.
2. On the main FitPro+ software display, select the USB icon and select **PortaCount 8030/8038 Fit Test Driver**.
3. When more than one PortaCount Fit Tester is connected, a pop-up (see figure) will indicate the numbering scheme for the PortaCount Fit Testers. The order may be changed by clicking on the up or down arrow next to the serial number. For example, you might want to order them left to right according to the operator's position. This will be helpful in identifying units during the daily check and fit tests.

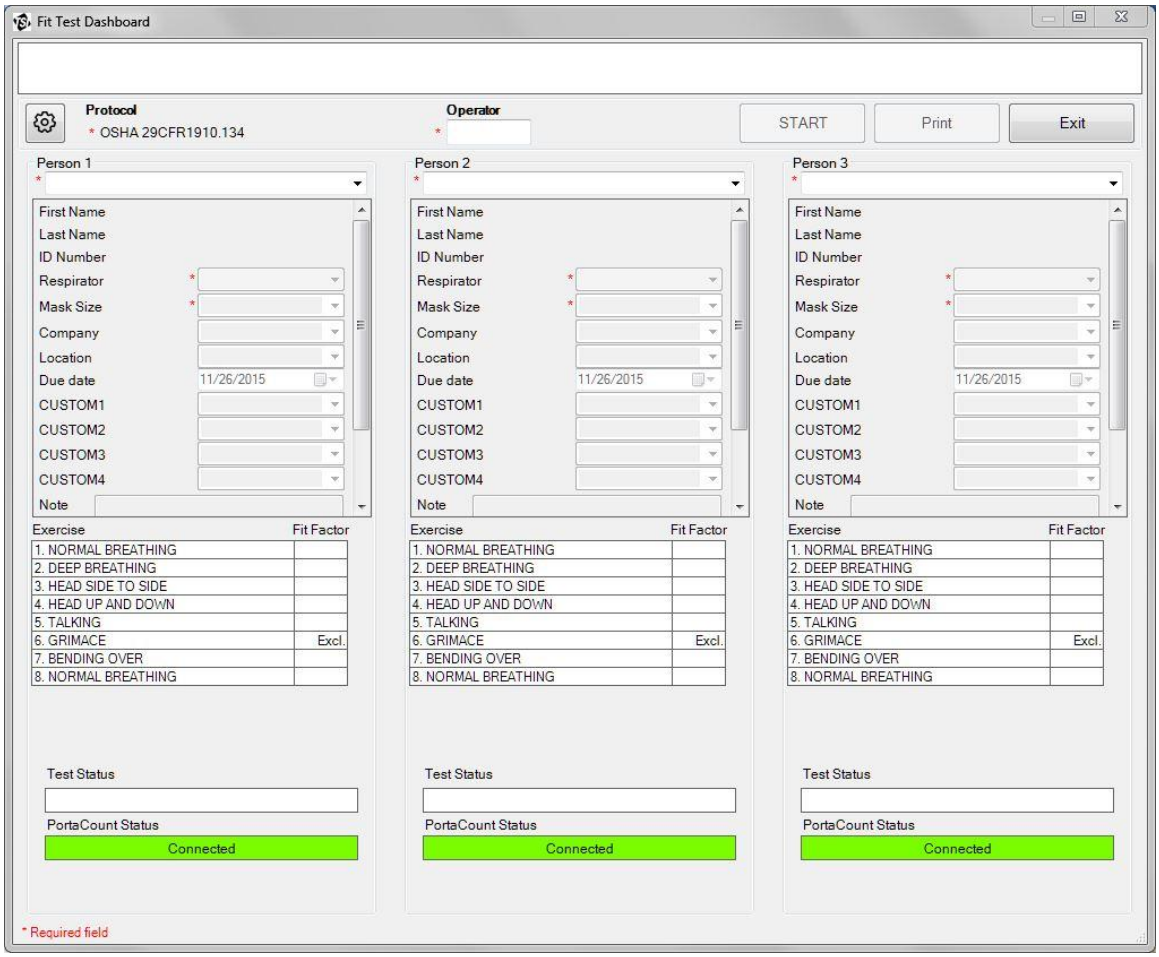


Note: *If using a PortaCount Fit Tester with version 2.9 firmware or greater, a lock screen should appear on the PortaCount Fit Tester display. Older firmware will not show the lock screen. This lock screen indicates the PortaCount Fit Tester number which makes it easy to coordinate the instruments.*

4. Hover the pointer over the Connectivity icon . It should display the serial number for each of the PortaCount Fit Testers connected.

Fit Testing

A new “dashboard” style Fit Test interface gathers all fit test data entries on a single screen for more efficient testing. The fit test screen adjusts scale according to the number of PortaCount Fit Testers that are connected. Person 1 corresponds to PortaCount 1, Person 2 to PortaCount 2 and so on.



The fields can generally be filled out as normal. However, for those users operating the model 8038, all test subjects must use a respirator of similar efficiency (N95 or N99). A Mixture of N95 and N99 respirators cannot be tested at the same time because the protocol timings vary.

After filling in the fields, press **Start.** The Test status and results and PortaCount Fit Tester Status are all reported independently of one another. If a fit test fails, the tests may terminate independently of one another if “Terminate early” was selected in Global FitPro+ Options in Chapter 1. The Print button prints all tests (one per page).

If preferred, or if you have minimal screen resolution, you can switch from the vertical layout displayed above to a horizontal layout by going to the Global FitPro+ Options menu. Refer to Chapter 1 - Global FitPro+ Options section for more information.

Perform Daily Checks

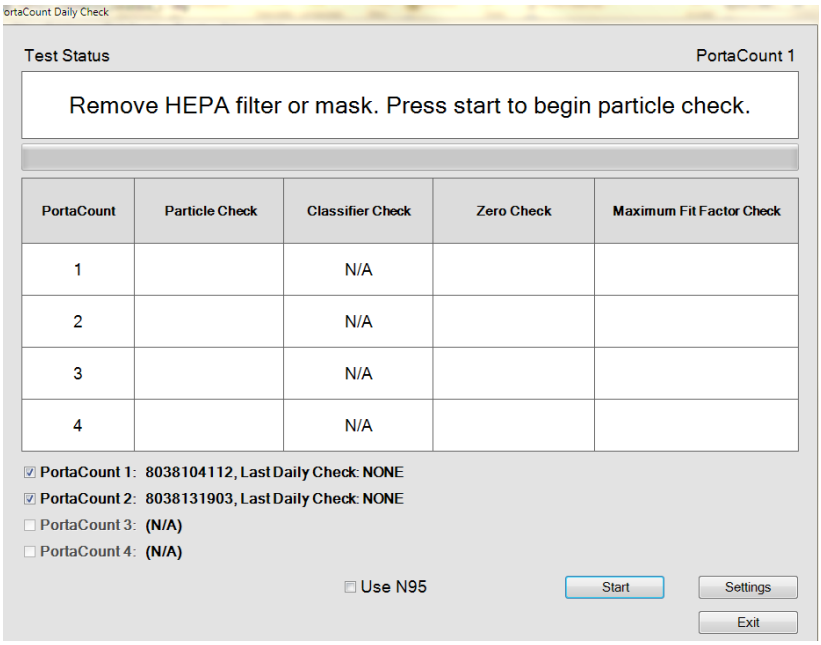
1. When more than one PortaCount Fit Tester is connected, the daily check screen will allow each of them to be selected independently.

   Note: *If N95 is enabled, it will be enabled for all of the devices.*

2. Select all PortaCount Fit Testers due for daily check.

3. Daily checks are performed serially. The first PortaCount Fit Tester to be checked will be displayed above the instruction field in the upper-right-hand corner. Follow the displayed instructions for this PortaCount Fit Tester.

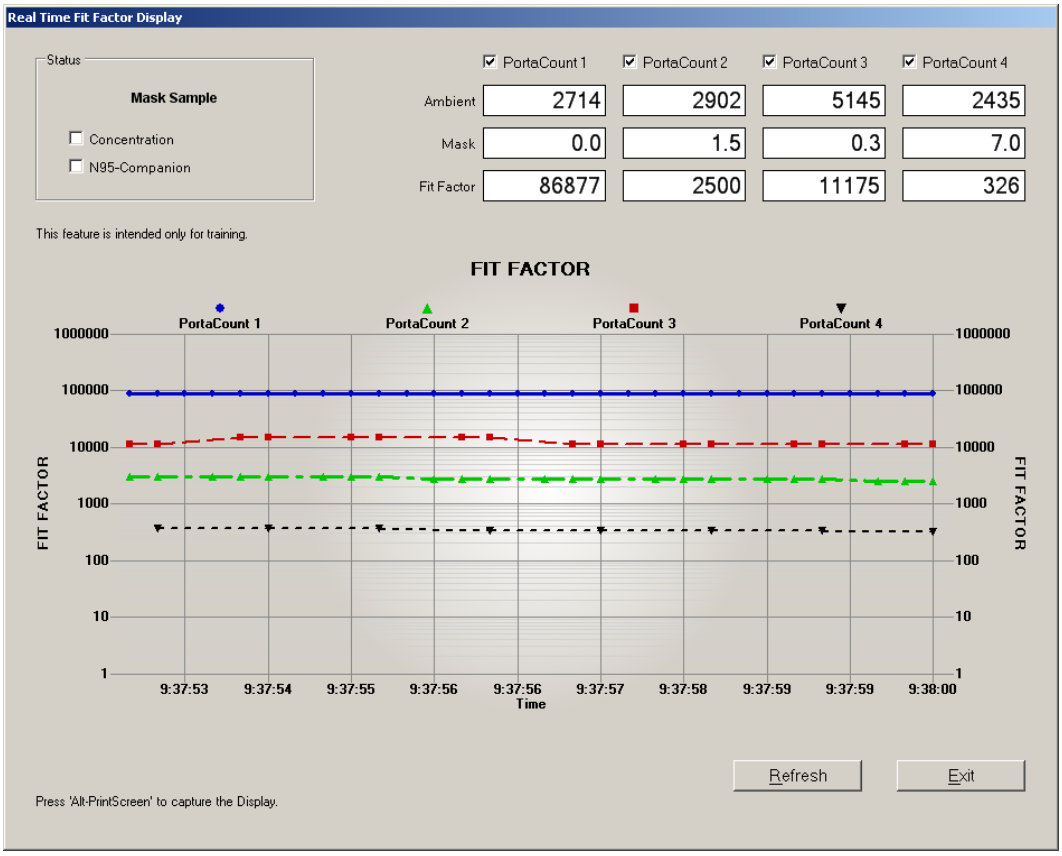
4. Click **Start**.



5. As the test progresses, status messages and additional instructions will be displayed for this unit. When the test completes, the next PortaCount Fit Tester to be checked will be displayed above the instruction field.

Monitor Real-Time Fit Factors

When multiple PortaCount Fit Testers are connected to FitPro+ software, the real-time screen will scale to show information from all units. In the upper-right corner is status and concentration information gathered from each PortaCount Fit Tester. The graph displays a colored line representing the fit factor of each test subject. Concentration check can be enabled to show concentration readings on all instruments at the same time. Refer to Chapter 3 - Real Time.



(This page intentionally left blank)

APPENDIX D

Using FitPro+ Software with Models 8020, 8020M, and 8028

This appendix provides information for the users of PortaCount® Respirator Fit Tester Models 8020 and 8028 which were previously supported with FitPlus™ v3 software. This appendix also applies to Model 8020M Fit Testers manufactured after 2014.

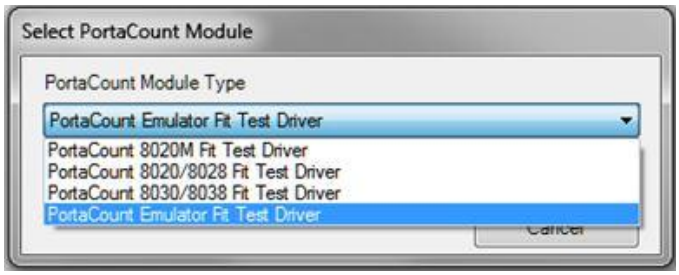
Note
"Model 8028" refers to a combination of the model 8020 with the addition of the N95 Companion, model 8095, where these two units are connected during operations.

Setup

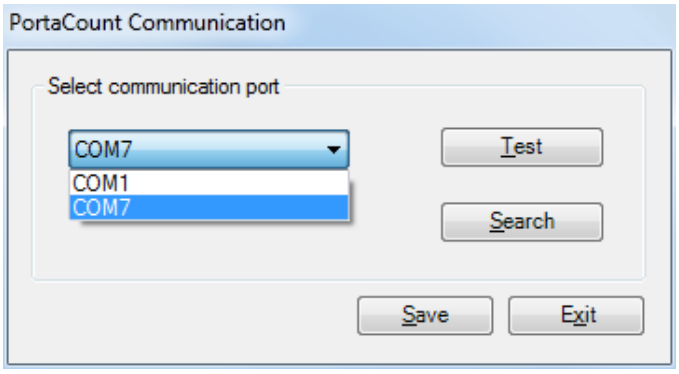
1. Turn on the PortaCount Plus Fit Tester. In the case of the 8020, 8028, or 8020M manufactured before 2014, connect it to your personal computer using a direct COM port connection or USB to serial converter. In the case of the 8020M manufactured after 2014, connect it to your personal computer using a USB cable; ***do not*** use the data port.
2. Launch FitPro+™ software. Select **Setup | PortaCount communication**.

   For the PortaCount Fit Tester Module type select **PortaCount 8020/8028 Fit Test Driver** or **PortaCount 8020M Fit Test Driver**.

   You will be prompted to configure the COM port.

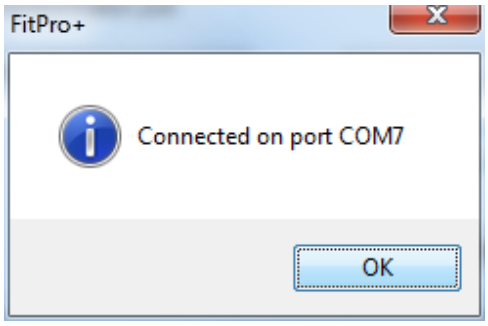

Select PortaCount Module
PortaCount Module Type
PortaCount Emulator Fit Test Driver
PortaCount 8020M Fit Test Driver
PortaCount 8020/8028 Fit Test Driver
PortaCount 8030/8038 Fit Test Driver
PortaCount Emulator Fit Test Driver

3. The **Test** button will confirm that you have a connection on the selected COM port. If you do not know which COM port you are using, try the **Search** function and the computer will attempt to find the PortaCount Fit Tester on the available COM ports.



4. Click **Save**.

   Informative messages about the COM port and PortaCount Fit Tester configuration will be shown. You will also be notified whether the Fit Tester configuration that you are using is configured to test N95 or N99 respirators. If you wish to test N95 respirators, first connect the N95-Companion to your model 8020 and restart FitPro+ software.



Operations

Operations such as Fit Testing, Daily Checks, and monitoring Real-time Fit factors are similar between PortaCount models 8020, 8020M, 8028, 8030, and 8038. Refer to Chapters 2 and 3 for further details of these functions. Differences are described below:

- Low alcohol warnings are not supported with the Model 8020 or Model 8028.
- During the Daily Check, a classifier check will not be performed on the Model 8028.
- The N95 checkbox will be unavailable for any function. Unlike the Model 8038, the Model 8028 cannot switch automatically between N95 and N99 respirator testing. The instrument must be reconfigured first as described above.

Note
FitPro+ software ***does not*** support multiple simultaneous fit tests to be run with Model 8020, 8020M, or 8028.

INDEX

A

about FitPro+ software, 23
about this manual, v
access database, 36
activities menu, 10
add fields in report, 54
add new person, 12
Adobe Acrobat Reader, 23
advanced edit/delete, 46
advanced record selection and filtering, 47
ambient concentration, 19
apply custom names, 32
approval field, 29
assigned card printer, 62
auto description field, 29
automatic print, 6
automatic save, 5
automatic termination, 6
available fields, 54, 56

B

backup database, 45

C

card printer settings, 63
change active database, 6
change active link, 35
change global FitPro+ options, 21
change settings, 62, 63
communication PortaCount selecting, 22
company, 32
company field, 28
company name field, 57
computer requirements FitPro+ software, 1
concentration radio button, 19
configuration, 6
configuration dialog, 28
configuration field, 28
configure emulator, 65
connect PortaCount Pro Respirator Fit Tester, 9
connectivity button, 22
connectivity issue, 59
conventions, manual, v
copy, 44
copy records, 39
create new link dialog, 36
create new report, 52
creating reports, 51
criteria to select records, 53, 55
custom, 32
custom field names, 8
custom reports, 51
customizing fit test card, 57

D

daily check results report, 51
daily check settings, 20
daily checks, 10
performing, 19
daily checks on multiple PortaCount fit testers, 70
data record, 42
data record tools, 39, 41, 43, 44, 46
database
backup, 45
change active list, 36
copy, 44
data record, 42
data record tools, 41, 43, 44, 46
edit
people table, 42
manage database link, 36
manage links, 35
merge, 44
move, 44
restore, 45
database exchange, 26
database information, 25
database menu, 25
advanced edit/delete, 46
backup database, 45
editing record table, 27
fit test table, 31
people table, 27
respirator table, 29
restore database, 45
date and number formats, 6
default exercise protocol, 33
default fit test protocol changing, 4
default protocol, 34
delete, 28, 29, 32, 34
delete filter, 47
delete link, 39
delete records from a database, 39
delete report, 52
description, 30
display real-time fit factors, 18
due date, 32
duplicate field, 28

E

edit fit test table, 31, 62
edit fit test table dialog, 32
edit people, 12
edit people table, 12, 27
edit protocol table, 33
edit record tables, 27
edit respirator table, 29
exchange database, 26
exclude, 34
exercise name, 34
exit, 17, 28, 30, 32, 34, 52
exit fit testing, 13
export, 43
export data, 43
export records to a text file, 39

F

Fargo card printer, 61
file menu, 16
ID card print settings, 17
report print settings, 16
filter efficiency, 30
first name, 32
first name field, 28
fit factor, 18
fit factor pass level, 30
fit factors monitoring, 71
fit test, 17
fit test card, 51
fit test card options, 6, 57
fit test completed, 13
fit test dashboard, 6, 11
fit test report, 51
fit test table
editing, 31
viewing, 31
fit testing
exit, 13
fit testing with multiple PortaCount fit testers, 69
fit tests with emulator, 65
FitPro+ single fit test report, 57
FitPro+ software
computer requirements, 1
features, vii
fit testing with, 9
installation, 1, 2, 3
introduction, vii
language, 3
program setup, 3
setup menu, 21
start, 10
USB driver installation, 3
FitPro+ software printing, 56

flash drive, 26, 42
  database exchange, 26, 41
  xml database limit, 40
flash drive database exchange, 40
format, 6

G

global fit test options, 57
global FitPro+ options, 5
  change, 21

H

help file contents, 23
help menu, 23
hide ID number, 6
high concentration warning level, 7

I–J

ID card print settings, 17
ID card printer, 61
  select proper ribbon type, 61
  setup, 61
ID number, 32
ID number field, 28
import and export XML files for flash drive, 39
import flash drive database, 42
inactive records, 41
introduction, vii
  FitPro+ software, vii

K

K-Premium Resin, 61

L

label/data field, 28
language, 6
language, select, 6
last name, 32
last name field, 28
link to MS SQL database, 38
link to MS SQL Database, 37
link, new, 36
location, 32
location field, 28
lock out, 10

M

manage database links, 35
manual
  conventions, v
manufacturer, 30
manufacturer name field, 30
mask size, 32
  select, 12
menu options, 15
merge databases, 39
Microsoft .NET, 2
Microsoft Access, vii
Microsoft Access database files, 26
Microsoft SQL Server, vii
minimal screen resolution, 69
model, 30
Model 8020
  using FitPro+ software
    operations, 74
    setup, 73
Model 8020M
  using FitPro+ software
    operations, 74
    setup, 73
Model 8028
  using FitPro+ software
    operations, 74
    setup, 73
Model 8030
  using FitPro+ software
    operations, 74
Model 8038
  using FitPro+ software
    operations, 74
model name, 33, 34
modify report, 51, 53
monitor, 1
monitoring real-time fit factors, 71
multi-respirator fit test card, 51

N

new, 28, 30, 34
new link, 26, 36
new test, 13
next due report, 51
next test due in __ months field, 34
note, 32
note field, 28

O

operator, 32
operator field, 12
overall fit factor, 6
overall fit factor field, 32
overall pass, 32
overwrite duplicate records, 45

P–Q

page setup button, 62
pass level, 32
past due report, 51
people list, 28
people report, 51
people table
  editing, 27
  viewing, 27
perform daily checks, 19
PortaCount communication, 22
  select communication port, 73
PortaCount M/N, 32
PortaCount menu, 17
PortaCount not detected message, 10
PortaCount Pro
  connecting, 9
PortaCount S/N, 32
PortaCount status screen, 22
pre-defined reports, 51
print, 63
print card, 32
print preview, 62
print report, 32, 51
printer
  compatibility, 61
printer setup, 61
protocol, 32
protocol name, 33, 35
protocol name field, 35
protocol table, 33

R

real-time ambient concentration, 17
  viewing, 19
real-time fit factor, 18
real-time fit factor display screen, 71
real-time fit factors, 17
record destination, 45, 46
record Inactive box, 28
record source, 41
record type to export, 43
records to include, 43, 46, 47
redo test, 13
removable fit test card, 57
remove fields in report, 54
remove link, 39
remove link dialog, 39
report
  add fields, 54
  remove fields, 54
report details, 52, 53
report list, 52, 53
report menu, 21
report print settings, 16
report printer, 6
report printing, creating and modifying, 51
report selection, 52
report wizard, 53
respirator, 32
  add new, 12
respirator approval field, 29
respirator list, 29, 30
respirator report, 51
respirator table
  editing, 29
  viewing, 29
respirator table dialog box, 29
restore database, 45
results, 33

S

sample timing, 35
sample timing field, 35
save, 28, 30, 32, 35
save filter, 48
saved selection filters, 48
search for servers, 38
select, 35
select a protocol, 11
select database, 52, 53
select database table, 54
select destination database, 42
select fields to use for sorting, 56
select formatting, 6
select language, 6
select mask size, 12
select PortaCount communication, 22
select PortaCount module screen, 22
select PortaCount module type, 73
select report, 21, 52
select source XML file, 42
select test subject, 12
selected fields, 56
setup menu, 21
show only inactive records, 28
show signature lines on fit test report, 6
single fit test, 21
single fit test report, 57
software license agreement, ii
sort by, 32
sorted records, 31, 32
split a database, 48
split database, 39
start a fit test, 11
start FitPro+ software, 10
start the emulator, 65
style, 30

T

terminate fit test when fit factor for any exercise fails checkbox, 35
test date, 32
test status, 13
test subject select, 12
trademarks, v
troubleshooting, 59

U

USB connectivity issue, 59
USB driver installation, 3
USB hub, 60, 67
user configuration, 7
using multiple fit testers, 67

V

view fit test table, 31
view people table, 27
view protocol table, 33
view report, 53
view respirator table, 29

W–X–Y–Z

warn when fit factor is above…, 7
Windows Internet Explorer version differences, 56

TSI Incorporated – Visit our website **www.tsi.com** for more information.

USA	**Tel:** +1 800 874 2811	**India**	**Tel:** +91 80 67877200
UK	**Tel:** +44 149 4 459200	**China**	**Tel:** +86 10 8219 7688
France	**Tel:** +33 1 41 19 21 99	**Singapore**	**Tel:** +65 6595 6388
Germany	**Tel:** +49 241 523030		

P/N 6001874 Rev L ©2015 TSI Incorporated Printed in U.S.A.